THE ROCK TRIANGLE, BURY:
THE ARCHAEOLOGY OF AN INDUSTRIAL SUBURB
The location of Bury and the footprint of The Rock Retail and Leisure development
Over the last two decades Bury has seen a considerable amount of archaeological work, undertaken mainly in response to threats from development proposals that destroy archaeological remains. However, some work has also focused on understanding and presenting the town’s rich archaeology, such as the project in the 1990s to expose, restore, and present the site of Bury Castle as part of a rejuvenated town square within the heart of Bury. This booklet summarises the results of the largest archaeological investigation ever undertaken in the town, secured through a planning condition and funded by the developer.

The Rock Triangle was once a vibrant and densely packed industrial suburb full of textile mills, iron foundries, chapels, and houses. This townscape epitomised industrialised southern Lancashire, which became one of the world’s leading manufacturing centres in the first half of the nineteenth century. However, by the late twentieth century, many buildings had become run down and were demolished to make way for car parks adjacent to the town centre.

Oxford Archaeology North’s archaeological excavations at The Rock Triangle uncovered a rich variety of evidence. This booklet seeks to describe the results of these excavations, provide historical context for them, and an understanding of the industrial processes undertaken.

I have considerable pleasure in introducing you to this publication, which is Volume 2 in a new series called *Greater Manchester’s Past Revealed*, covering not only Bury’s wonderful archaeology, but also that of the whole of the Greater Manchester area: Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan.

Norman Redhead, County Archaeologist, Greater Manchester
The Rock Triangle is a major development in Bury, built between 2008 and 2010, and incorporates two department stores, more than 60 other shops, a cinema, various restaurants and new public spaces. It lies on the eastern fringe of the historic town centre, occupying land that was transformed from fields to an important industrial suburb during the nineteenth century, as a direct result of the growth in the region’s textile industries. By the end of that century, the area was dominated by closely packed textile mills, engineering works and iron foundries, small workshops, warehouses, and rows of workers’ houses, forming a townscape that was typical of industrial Lancashire, but has now largely disappeared.

It was during this period that Lancashire came to be the leading centre in the world for the production of cotton goods, an industry in which Bury played an important role. Whilst the region’s textile industry went into sharp decline in the mid-twentieth century, its former importance is reflected in the surviving buildings. Most of those in the area of The Rock Triangle had been demolished by the end of the twentieth century, however, leaving only their foundations beneath the modern landscape.

Plans to develop The Rock Triangle threatened these buried remains, as they would be destroyed by the foundations for the new buildings. In order to compensate for their complete loss during the development, the Greater Manchester Archaeological Unit, which provides advice to Bury Council, recommended that an archaeological investigation of the site was undertaken. In the first instance, this involved the excavation of several trial trenches, which was carried out by Earthworks Archaeology. This showed that the buried remains of four large industrial complexes and an area of workers’ cottages survived in-situ, and merited further investigation. Further work was carried out by Oxford Archaeology North in 2006/7; together with a photographic or measured survey of the few surviving historic buildings in the area, which was compiled by Castlering Archaeology.
Evidence for the earliest human activity in the area is recorded mainly from the higher ground above the Irwell Valley. These upland areas were occupied in the summer months by hunter-gatherers, who took shelter in the valley bottom in the winter. During these months, it is likely that they lived in small camps, such as that found on the E’es in Radcliffe, where artefacts of Mesolithic and Neolithic date (c 10,000 to c 2300 BC) have been discovered.

The earliest indication of more permanent settlement in the area, however, dates to the Bronze Age (c 2300 BC to c 700 BC), when small farming communities became established across the North West. Evidence for settlement in the Bury area during this period is provided by the remains of more than a dozen cremation burials, discovered during excavations at Whitelow Hill near Ramsbottom in 1960-5. Fragments of urns and other artefacts of a Bronze-Age date have also been discovered within the town, at Bury Grammar School, and immediately to the south of St Mary’s Church.

Other evidence for prehistoric activity in the area dates to the Iron Age, which spanned the years from c 700 BC until the arrival of the Romans. It was probably during the Iron Age that the local population began to proliferate, resulting in an increase in forest clearance and farming. This period is also characterised by the emergence of defended settlements, a good example of which lies to the north of Bury at Castle Steads. This settlement occupied a natural promontory overlooking the River Irwell, which is defined on its north, west and south sides by steep slopes falling to the river below. The eastern side of the promontory has a more gentle slope and there the early settlers dug a ditch in order to define, and perhaps defend, this side of the settlement.
The Roman army arrived in the North West in the early AD 70s, and built several forts across the region, connected by a network of roads. One such road, linking the forts at Manchester and Ribchester, crossed the Irwell Valley to the west of Bury; a hoard of Roman coins has been found close to the line of this road in Ainsworth. Whilst there is little other evidence, as yet, for any Roman settlement in Bury, excavation has indicated that Castle Steads was occupied until the end of the second century. Similarly, excavation of the ditched enclosure on Rainsough Hill near Prestwich in 1983 produced numerous fragments of Roman pottery, suggesting that it was occupied in the first and second centuries AD.

Very little is known about the people who lived in the North West following the collapse of the Roman Empire in the fifth century. Amongst the few finds dating to this period that have been discovered around Bury are an early eighth-century silver coin found at Whitelow, and fragments of an Anglian stone cross that had been reused in a wall close to Prestwich parish church. Fragments such as these are normally an indication for there having been an early church in the vicinity, which implies some settlement in the area prior to the Norman Conquest.
Bury is first mentioned in a document dating to 1194, when it was referred to as Biri. The medieval settlement was probably focused on St Mary’s church, the earliest part of which was built in the twelfth century, although eighteenth-century records suggest that there was a church at Bury as early as 971. To the south of St Mary’s church lay the market place, and to the west was the manor house, the residence of the lord of the manor. Radiating from the market place were the two main thoroughfares: a road leading west towards Bolton; and another leading east, along The Rock, towards Rochdale.

The manor was held by Sir Henry de Bury in the thirteenth century, although it passed subsequently to the Pilkington family, who were important members of the Lancashire gentry. It was during this period, probably in 1440, that Bury was granted a royal charter, allowing the town to hold a market. At a similar date Sir Thomas Pilkington planned to rebuild and fortify the manor house and, in 1469, he was granted a ‘licence to crenellate’ by Edward IV; this royal consent was required by any individual who wished to fortify a building. The new manor house was surrounded by a moat with a buttressed stone defensive wall along its inner edge. Inside the moated enclosure, Sir Thomas also built a massive stone tower house, which became known as Bury Castle. This was either two or
three storeys in height, and probably contained a kitchen at ground-floor level, with the great hall and private accommodation above.

The new manor house was short-lived, however, as it was razed to the ground on the orders of Henry VII, after Sir Thomas Pilkington supported the House of York at the Battle of Bosworth in 1485. Pilkington’s land holdings were also confiscated, and the manor of Bury passed to the Earls of Derby. John Leland, the famous antiquary, visited Bury in 1540, and described the manor house as ‘a ruine of a castle by the parish church’. The remaining stonework was looted in later years to provide materials for new buildings in Bury, and the site was eventually built over in the eighteenth century.

An archaeological excavation carried out in 2000 concluded that the earliest phase of the site, dating to between 1359 and 1400, comprised a house platform surrounded by a moat. A section of the buttressed lower outer wall of the fortified manor house built after 1469 has been consolidated and restored by Bury Council, and can be viewed on Castle Street, off The Wylde.
The economy of Bury throughout the medieval period was based primarily on agriculture, especially the rearing of cattle and sheep, and the production of woollen goods. The earliest record of the textile trade in Bury dates from the reign of Edward III (1327-77), and refers to a group of Flemish weavers who had settled in the town and wove cloth from locally produced wool. The trade became particularly important during the fifteenth and sixteenth centuries, when the export of woollen cloth from Britain trebled. Throughout this period, the production of yarn and cloth was a cottage-based industry, centred on the weavers’ cottage.

Some important advances in the textile industry were developed in Bury during the eighteenth century, representing key stages in the transition to the factory-based industry that was to have a profound effect on the economy and landscape of Lancashire. One of the earliest improvements was the ‘flying shuttle’, which was introduced in 1733 by John Kay of Bury. This device speeded up the weaving process, and allowed a single weaver to produce a wide piece of cloth. In 1760, his son Robert improved the original mechanism by a motion he called the ‘drop box’, whereby a weaver could use any one of three shuttles, and thus weave a fabric of various colours.
It was also during the eighteenth century that the manufacture of cotton goods began to spread widely across the region, eventually displacing wool as the principal branch of the textile industry in Bury. At the centre of this transition was the Peel family, who became one of the most famous names in Lancashire’s early cotton industry. Amongst their important contributions to the industry was the introduction of a mechanical means of printing a coloured pattern on cotton cloth, known as calico printing. This was developed by Robert Peel, a yeoman farmer near Blackburn, who discovered that a roller with decoration carved in relief could be used instead of block plates to print a repeat pattern onto cloth. The first pattern he produced was a parsley-leaf design, earning him the nickname of ‘Parsley Peel’. The success of this process enabled Robert Peel to give up farming and devote himself entirely to the printing business, which he carried out at Brookside Mill near Blackburn.

Following the success of this new venture, Robert Peel’s son, also called Robert, started his own printing business in partnership with his uncle, William Haworth, and William Yates. In 1773, the partners bought a ruined corn mill on the River Irwell at Bury Ground, a short distance to the north-east of the modern town centre, and set up a calico-printing works. This was the first proper industrial factory in this part of the Irwell Valley, and expanded to become a thriving works.

The calico-printing process, showing on the left a machine fitted with the engraved copper rollers transferring the pattern onto the cloth, and on the right is a block printer using a hand-carved wooden block.
In the same year, Peel and Yates established Brooksbottom Mill on the River Irwell at Summerseat, marking the beginning of the rise of the cotton industry in Bury. Their business proved to be enormously successful, and the following year Peel and Yates diversified into the spinning of cotton in addition to printing woven cloth. They established a small factory in the vicinity of Butcher Lane in Bury, which was equipped initially with hand-powered spinning machines. The exact location of this mill is uncertain, although it was clearly the first textile factory to be built in the area of The Rock Triangle. Peel and Yates are thought to have adapted the spinning machines in this mill at an early date, and powered them using a waterwheel driven from the Barn Brook. During this period, in 1775, Peel and Yates also introduced an improved system of carding cotton, which soon became standard practice in cotton mills throughout the region.

By the early 1780s, the Peel family had established an important group of water-powered textile factories in the area. This included mills at Butcher Lane, Summerseat, The Burrs, Heywood, Hinds, Radcliffe, and White Ash, together with their printing works at Bury Ground.

Sir Robert Peel (1750-1830), the First Baronet, was a successful industrialist, and also had a notable career in politics. As a Member of Parliament, he was responsible for the Health and Morals of Apprentices Act of 1802, which limited the number of hours that children worked in mills.
Throughout the post-medieval period, the area on the eastern fringe of Bury town centre that was to become The Rock Triangle was mainly agricultural land held by the parish church. It was crossed by a road of probable medieval origin that led eastwards to Rochdale. Butcher Lane, a minor road that headed south-eastwards from the Rochdale road, was also of some antiquity; it is mentioned in a parish register dating to 1644, whilst a document of 1701 refers to two cottages on Butcher Lane. Another reference, dating to 1696, refers to a smithy in this area, whilst an archaeological excavation, carried out by the Bury Archaeological Group on the northern side of Butcher Lane in the 1970s, provided some physical evidence for iron-working, potentially of medieval date. In 1764, a private Act of Parliament enabled the Rector of Bury to lease church lands for building purposes, paving the way for the development. This included Lister Field, which lay to the east of Butcher Lane. By the 1780s, buildings had been erected along both sides of the Lane.
An area to the south of Butcher Lane was examined during the archaeological excavation in 2007, which exposed the remains of a ditch that had probably formed part of a field boundary, and buried layers of soils. Analysis of these soils showed that the area had originally supported scrub vegetation with numerous trees, including alder, oak, hazel, and birch. Prior to the urbanisation of the area, the scrub-dominated vegetation was replaced progressively by grassland, presumably for cultivation, with
some evidence of cereal crops. Several fragments of pottery vessels, dating to the seventeenth and early eighteenth centuries, were also found, together with short sections of foundation trenches for one or two small buildings. These were replaced by stone-built cottages that were erected alongside Butcher Lane during the later eighteenth century.

The remains of another four stone-built cottages were excavated at Bedlam Green, a short distance to the south-west, which seemed to have been single-roomed dwellings with stone-flagged floors. Other excavated remains that dated to this period included three wells, several drains, numerous rubbish pits, and a row of postholes that may have formed a fence line or property boundary.
The earliest textile factories in the Bury area were water powered and relied on the Rivers Roch and Irwell, and their tributaries such as the Barn Brook, to drive the machinery. The rivers also provided a supply of water for the textile-finishing trades of bleaching, dyeing, and calico printing. The application of steam power to the textile industry in the late eighteenth century allowed new mills to be built wherever there was a supply of coal, rather than being restricted to a riverside location. As a result, steam-powered mills and factories were established on the periphery of Bury’s historic core, often clustered together in groups, as in The Rock Triangle, and engulfing agricultural areas such as Freetown, Fishpool and Pimhole. The pace of Bury’s growth is reflected in the size of the town’s population, which expanded faster between 1775 and 1861 than any other town in the region, except for Salford. From 1801-30 the town doubled in size, with the population increasing from 7072 to 15,086 residents. By 1901, Bury’s population had soared to 58,029.
The growth of Bury’s textile industry, and particularly the cotton-spinning branch, was checked by the Cotton Famine (1861-5) that resulted from the American Civil War, and growing competition from other cotton-spinning towns such as Oldham and Leigh. The production of cotton goods in Bury actually fell below the Lancashire average, to a level of half that of Rochdale, although this trend was offset by a growth in other branches of the industry. In particular, numerous bleachworks, dyeworks and printworks were established along the Irwell Valley, as it became a leading area for textile finishing. Bury also developed a reputation as a principal world centre for the production of specialised cloth used in technical processes, particularly woollen and cotton felt for use with paper-making and cotton-spinning machinery. Local firms that specialised in this branch of the textile industry included Thomas Hardman & Sons Ltd at their Fernhill Mills, and James Kenyon & Son on Derby Street. Bury also became well known as a centre for the manufacture of textile-machinery, with firms such as Robert Hall & Sons and Hacking & Co producing a range of machines used in the weaving trade.
Coal has been mined along the Irwell and Irk valleys around Bury and Radcliffe since at least the sixteenth century. The industry began to expand dramatically from the late eighteenth century, as the demand for coal increased with industrial development, and new technology allowed deeper shafts to be sunk. The availability of a local supply of coal was crucial to the efficient operation of steam-powered factories in the area, and allowed goods to be produced at a low cost. Collieries that were established close to Bury in the early nineteenth century included those at Ladyshore, Outwood, Allens Green, Bank Top, Cockey Moor, and Whittaker Bridge in Radcliffe.
In order to serve the growing industries of the area, the transport network across the region developed into a complex system, connecting various modes of transport and serving many locations. Whilst some of the expanding manufacturing towns in Lancashire, such as Manchester and Wigan, had enjoyed the benefits of the Mersey Irwell Navigation and the Douglas Navigation since the 1730s, the horse and cart remained the principal means of transporting goods to and from Bury until the arrival of the Manchester, Bolton, and Bury Canal. This was opened between Bury, Bolton, and Salford in September 1796, and was extended to the River Irwell in 1808, providing a connection to Manchester, and also to Liverpool via the Bridgewater Canal. The canal rapidly became the main artery for the delivery of raw materials, particularly coal, but also cotton and the transportation of manufactured goods to their markets. A daily service travelling from Bury Bridge Wharf to Manchester, Liverpool, and other destinations was also offered for passengers.

By the end of the nineteenth century, some 650,000 tons of coal from the local collieries were carried along the canal. Some of these collieries were situated adjacent to it, whilst others were connected via a network of tram roads. The canal also provided a source of water for factories that were built along its banks, such as Crompton’s paper mill, Daisyfield cotton mill, and the Irwell Bridge paper mills, situated at the terminus of the canal on Bolton Road.
The arrival of the railways in the mid-nineteenth century provided a further boost to industrial growth, and Bury developed a reputation as an important local transport hub. The first railway to the town was opened in 1846 by the East Lancashire Railway Company (ELR), which laid a track up the Irwell Valley as far as Rawtenstall, and built a station at Bolton Street in Bury. An important element of the station facilities was the Castlecroft Warehouse, which was built in 1848 to store all the supplies brought in by the railway. The ELR also established its headquarters in Bury and, in 1856, opened an important locomotive works as Buckley Wells; today, this is one of the oldest surviving railway workshops in the world.

The second railway to Bury was opened by the Lancashire and Yorkshire Railway Company (LYR) on 1st May 1848. This line ran between Bolton and Rochdale, with a connection to Manchester, linking Bury to the national network. A station was built at Knowsley Street, which originally comprised a passenger facility with a wooden station house, and an extensive goods yard. The LYR carried out a major scheme of works on all their
properties between 1880 and the turn of the century, including the reconstruction of Manchester Victoria, Liverpool Exchange, Blackburn, and Bradford Exchange stations. Knowsley Street station was also improved and expanded during this period, particularly the goods yard, which became one of the largest in the region.

In the early 1960s, Richard Beeching’s report, *The Reshaping of British Railways*, was published, which recommended a radical overhaul of the national network and wholesale closures of its loss-making branches and duplicate routes. Consequently, in April 1967, the goods depot and yard at Knowsley Street were closed, although passenger services continued. However, despite the efforts of local campaigners, the line was closed in 1970, and the abandoned station was finally demolished in April 1971 after 123 years of service. The site was used thereafter as a car park until it was redeveloped in 2008-9 as part of the Townside scheme.

As an early part of the development process, however, the buried remains of the former station were exposed and recorded by an archaeological excavation. The remains included the foundations of the station master’s house, a large stable block, and a suite of buildings on the Manchester-bound platform, which included a ticket office, a parcel and left luggage offices, a ladies waiting room, and a general waiting room. The excavation demonstrated that there had been piecemeal modifications to all of these rooms during the lifetime of the station, and particularly after the late nineteenth century.
An extract from Benson’s ‘Map of Bury’ of 1845, showing the extent of the developing industrial suburb in the mid-nineteenth century, which included the Butcher Lane Mills, Vulcan Works, Openshaw’s Mill, and Moor Side Works. Surrounding these large industrial sites were areas of housing and several smaller industrial premises and workshops, several public houses, two schools, and a chapel.

The land on the eastern fringe of Bury was transformed during the early nineteenth century from a largely rural area to a thriving industrial suburb. Amongst the earliest steam-powered factories were Openshaw’s Cotton Mill on Earl Street, the Vulcan Works, a textile-machinery factory that was established on Butcher Lane, and Butcher Lane Mills, which were all in production during the 1820s. Butcher Lane Mills may have started as a ‘room and power’ mill, where floor space with access to a source of power was rented to small businesses. By the early 1830s, the firm of Walker & Lomax was
producing cotton goods at Moor Side Works, which was expanded during the following decades to create a large factory complex. Smaller industrial premises in the area included an iron foundry and a dye works on the Barn Brook, a woollen print works on Barlow Street and, by the mid-nineteenth century, James Kenyon had established the first of his woollen mills on Derby Street. Before the end of the nineteenth century, the area had been developed completely with numerous textile mills, engineering works and iron foundries, small workshops, and rows of workers’ cottages, creating an industrial townscape that characterised much of Lancashire for the next 100 years.

A representative sample of these sites was targeted by the archaeological excavations carried out in 2006-7, which focused on uncovering the buried remains of the various boiler and engine houses. The size and form of these buildings varied with the type of machinery that they contained, which evolved continuously through the nineteenth century as technology improved. By examining the remains of the engine and boiler houses of mills such as these, their evolution can be charted.
An aerial view of the industrial suburb in 1937
(Bury Archive Service no 268)
Charles Openshaw was born in Bury in 1779, the youngest of 21 brothers and sisters. He started business in Bury as a manufacturer of dimities, a light cotton fabric, with a partner, Peter Rothwell. The partnership soon ended, and by 1828 Charles Openshaw had established a large new mill on Butcher Lane for producing fustian goods. The main entrance to the mill was from Butcher Lane, and led to an enclosed central yard. In the south-eastern corner of the complex was a gasometer for supplying gas lighting inside the mill.

By 1853 Charles Openshaw had passed the family business onto his sons, who expanded it during the following decades. A new weaving shed was built on the eastern side of Earl Street, occupying the site of an earlier mill and a row or cottages. Business continued to prosper, although by 1910 the firm had relocated to Manchester, and their mills on Earl Street were bought by James Kenyon & Son. The mills continued to be used for manufacturing textile goods until the second half of the twentieth century, when the industry went into sharp decline as a result of foreign competition. The mills were demolished in the early 1970s, and the site used as a car park.
The archaeological excavation of Openshaw’s Mill was focused on the engine and boiler houses within the original factory. The surviving remains of the boiler house included its southern wall, and internal seating walls, with several large mounting blocks that had supported the boiler. The internal arrangement of the boiler house indicated that it had probably been designed to house a Cornish boiler, which was essentially a long, horizontal cylinder with a single large flue that contained the fire, and typically measured 16 x 6 ft (4.87 x 1.83 m).

The boiler provided the steam required by the mill’s engine, which had been situated to the south of the boiler house. Although few buried remains of the engine house survived, it is most likely that it had originally contained a beam engine, which was the type installed in the majority of steam-powered mills until the mid-nineteenth century. The excavation uncovered some evidence for alterations to the engine house, including the insertion of a small basement into its eastern side, which was accessed via a flight of stone stairs.

The excavation also uncovered several sections of a long flue with an arched roof that had carried the hot waste gases from the boilers to the mill chimney. The flue was built of firebrick with a flagstone floor, and measured approximately 1.5 m wide.
Butcher Lane Mills and the Vulcan Works

Situated adjacent to Openshaw’s Mill on the northern side of Butcher Lane were the Vulcan Works and Butcher Lane Mills. The Vulcan Works was established in the 1820s by Samuel Smith, who built machinery used in textile mills. The business was taken over eventually by Walker & Hacking, described in nineteenth-century trade directories as manufacturers of cotton, silk, and woollen textile machinery. Another part of the Vulcan Works was occupied by Richard Walker & Brother, described as iron and brass founders and boiler makers.

Butcher Lane Mills were also built during the 1820s, and appear to have been occupied originally by several small firms that were all producing textile goods. By 1852, however, they seem to have been occupied solely by James Whitworth, a manufacturer of cotton goods, who advertised the mills for sale in that year. The sale notice describes the premises as comprising a four-storey spinning mill measuring 60 x 43 ft (18.3 x 13.1 m), a weaving shed of 110 x 61 ft (33.5 x 18.6 m), two steam engines of 48 horse power, a two-storey cotton room and warehouse, a mechanics’ shop, counting house, stable and cart house, and a shippon with standing for eight cows.

By the end of the nineteenth century, the Vulcan Works and Butcher Lane Mills had been taken over by the Vulcan Cotton Spinning & Manufacturing Company, which converted the buildings for use as a combined cotton spinning and weaving mill. This firm remained in business until 1933, when the premises passed to the Premier Waterproof and Rubber Company Limited. The buildings were
eventually demolished in the 1980s and the site used thereafter as a car park, although elements of the Vulcan Iron Works on the south side of Butcher Lane survived until 2008. This part of the iron works had been converted for use as a leather works by 1910, and fragments of an original wall were reused in a new building.

The archaeological excavation was focused on the engine house of Butcher Lane Mills, and exposed the west and east walls of this building. The walls were both of stone construction, measured 0.65 m wide, and were set 9 m apart. The engine house contained a series of huge stone blocks, to which the steam engine would have been secured. These blocks were arranged in an H-shaped formation, the layout of which suggests that they had been intended for a horizontal steam engine. Steam engines of this type were introduced into textile mills during the 1860s, and rapidly replaced beam engines.

The engine room had evidently been extended during the late nineteenth or early twentieth century with the addition of another stone wall that abutted the southern side of the existing building. The enlarged building contained several huge stone blocks, presumably representing the foundation beds associated with the installation of a larger steam engine.
Excavation areas superimposed on the Ordnance Survey map of 1910. By that date, the central mill block had been demolished, and the warehouse on Derby Street, denoted as Polka Shed, had been converted for weaving. The mill block on Barlow Street, annotated as Moorside New Mill, had also been rebuilt.

Moor Side Works had been established on land to the north of Openshaw’s Mill by the early 1830s by the firm of Walker & Lomax, cotton spinners and manufacturers of fustian goods. Nineteenth-century maps show that this extensive works included three textile mills, a warehouse fronting onto Derby Street, and several large reservoirs to the rear. These were probably supplied with water from the Barn Brook, which flowed to the east of the mills.

By 1871, Walker & Lomax had stopped producing fustian goods, and were concentrating on manufacturing velvets, velveteens and cords, perhaps reflecting changing fashions in clothes. At that date, this large mill complex contained 50,000 spindles for spinning cotton yarn and 1500 looms for weaving. In addition, the firm of Hacking & Parkinson rented floor space to make components for textile machines. The mill complex was remodelled on several occasions during the late nineteenth and twentieth centuries, as can be seen from the sequence of historical maps. The mill remained in production until 1960, but was eventually demolished in the early 1970s, and the site cleared.

The archaeological excavation examined the buried remains of the power plant for one of the mills. The earliest structures to be exposed included the walls of the boiler house and the foundations of an octagonal, brick-built chimney. Situated within the flue that
channelled hot waste gases from the boilers to the chimney were the remains of the housing for an economiser. This important device, invented by Edward Green in 1845, allowed huge reductions in the amount of coal that was required by the steam-raising plant.

Other buried remains that were exposed during the excavation represented later modifications to the mill complex. These included a series of stone blocks that formed the foundations for a new engine which had been installed during the late nineteenth century. The arrangement of these blocks indicated that the engine had been a horizontal type.

The boiler house had also been remodelled during this period to allow a new boiler to be added. The surviving foundations were consistent with this having been a Lancashire boiler. This resembled a long cylinder, similar to the Cornish type, but with two internal flues, each connected to their own furnace. The design was patented by William Fairbairn and John Hetherington in 1844, and it became the most popular type of boiler used in textile mills.
Foundations for a horizontal steam engine, installed to power the new weaving shed during the second half of the nineteenth century. Excavation also exposed the remains of a new weaving shed that had been added to the mill complex at the northern end of Derby Street by the early twentieth century, and named the Polka Shed on the Ordnance Survey map of 1910. This had evidently been powered by another new steam engine, which was also of a horizontal type.

The Polka Shed was a single-storey extension to a building shown on Benson’s Map of Bury of 1845, and known latterly as Derby House; this was the last building associated directly with the textile industry to survive in The Rock Triangle. Prior to its demolition in 2008, Derby House was the subject of an archaeological survey. The size and appearance of this building suggested that it had been designed as a textile mill, although each floor, including the basement, was served by ‘taking-in’ doors, through which goods were loaded in and out. The presence of these suggested that Derby House was used at some point as a warehouse, probably for storing textile goods produced at Moor Side Works.
Derby House was of ‘fireproof’ construction, which eliminated the use of structural timbers and became increasingly popular in mill design after the mid-nineteenth century. Typically, cast-iron beams were used to support brick ceiling vaults, which were covered with a layer of sand or ash as bedding material for a flagstone floor. The beams on each floor in Derby House were supported by a single row of 11 cast-iron columns, placed at regular intervals along the centre of the building.
James Kenyon’s Mill

James Kenyon began his career in textiles in 1827, producing woollen goods in a small workshop on Clerke Street, before moving to larger premises on the western side of Derby Street in 1841. He died in 1863, and the business was carried on by his youngest son, also called James, who expanded the business and, in the early 1870s, built a second mill on Derby Street. By this date, the firm was manufacturing cotton and woollen goods at their Derby Street mills, and also produced specialist felts for use with paper-making and textile machinery.

New buildings were added to the mill complex and improvements were made to the existing buildings during the early twentieth century. This included the replacement of the steam engines with electrically-powered motors; Kenyon was one of the earliest textile manufacturers in Lancashire to install the new technology of electric motors to power the machinery in a mill.

The archaeological excavation examined the buried remains of Kenyon’s Mill on the eastern side of Derby Street, dating to the 1870s. These remains included part of a boiler room, which had probably contained a single Lancashire boiler, and a section of an associated flue.

Kenyon’s Mills on Derby Street in 1968, with Moor Side New Mill in the background (Bury Archive Service no 477)
This flue originally directed the boiler’s exhaust gases to a hexagonal, brick-built chimney, the foundations of which were also uncovered during the excavation. This chimney had also served Kenyon’s Mill on the opposite side of Derby Street, to which it was linked by another brick-built flue. This flue was built in 1884, together with a new boiler house and preparation rooms, which were required to replace buildings that had been destroyed by fire earlier in the year.

The buried remains of the engine house for the mill on the eastern side of Derby Street were exposed immediately to the south of the boiler room. The layout of the huge stone blocks that had supported the engine indicated that it had been of a horizontal type. The excavation also showed that the boiler was removed during the early part of the twentieth century, and the engine room then went out of use. These alterations were probably a result of the installation of an electric drive within this mill, which meant that steam power was no longer required.
In broad terms, the building of houses in Bury kept pace with the increasing population; in 1773, there had been 463 dwellings to house 2090 inhabitants, increasing to 1384 houses for just over 7000 people in 1801, and nearly 7000 houses for a population greater than 32,000 in 1871. Nineteenth-century maps of the area show that the textile mills and factories on The Rock Triangle were surrounded by rows of terraced housing, providing accommodation for the workers in the new industrial suburb.

The oldest buildings in The Rock Triangle were three adjoining properties along the north-eastern side of Rochdale Road, which was known originally as Clough Street. An archaeological survey of these buildings concluded that they all probably dated to the mid-eighteenth century. They were probably intended originally as small shops or workshops with living accommodation above; by the 1850s, for instance, No 1 was a chemist shop and No 5 was occupied by a boot and shoe maker.

Another eighteenth-century property lay at the corner of Butcher Lane and The Rock, and was in use from at least the mid-nineteenth century as the Eagle and Child inn. Whilst this building had been altered several times, it retained several historical features, including its simple Georgian-style doorway with semi-circular fanlight above.
Adjacent to the Eagle and Child was a short terrace of three-storey houses, which had been constructed along The Rock in two stages. The first phase comprised a block of four houses, each with a small private yard containing a lavatory to the rear. This block had been erected by the early 1890s, and another two houses were added in 1901, extending the row right up to the Eagle and Child. All of these houses were altered in the twentieth century, with the insertion of shop windows at ground-floor level.

These buildings provided a much higher standard of accommodation than the houses that they replaced. Two areas of earlier housing were examined as part of the archaeological excavation. On Earl Street, the remains of three single-roomed, stone-built cellars were uncovered, which had formed part of a small block of back-to-back properties. These were all similar in size, each room measuring approximately 5 x 4.5 m, some retaining the remnants of a flagstone floor. At least one of the cellars contained a fireplace, indicative of it having been used for residential purposes, whilst the
The excavated basement associated with one of the double-depth properties fronting onto Butcher Lane suggested that it had been an individual dwelling. Cellars were often used as dwellings in the industrial towns during the early nineteenth century, and were usually the cheapest and worst type of accommodation.

The remains of early nineteenth-century houses were also excavated at Bedlam Green, a short distance to the north-west of Earl Street, where two different types of workers’ cottages were discovered. Those fronting onto Butcher Lane were of a type known as a ‘double-depth dwelling’. At ground-floor level these houses contained two rooms, with the larger front room forming the parlour, whilst the smaller room to the rear acted as the kitchen. The houses were probably two-storeys high, and some also incorporated a cellar.

The remains of another type of cottage, classified as a ‘blind-back dwelling’, were uncovered along South Back Rock, and to the rear of the properties fronting onto Butcher Lane and Bedlam Green, which were accessed via an enclosed courtyard. At ground-floor level, these houses were composed of a single room, providing a cramped living area. However, the excavation suggested that later in the nineteenth century these small properties were converted from dwellings, and were perhaps then used as storerooms.
The excavations at Bedlam Green also provided some evidence for small-scale nineteenth-century industry. The remains of a small, brick-built workshop were discovered within the courtyard area to the rear of the domestic properties lining Butcher Lane and Bedlam Green. This workshop had an L-shaped ground plan and contained two rooms. Within these rooms, and also surrounding the building, numerous fragments of metal-working slag were discovered, which probably related to activity that had occurred within the workshop. Examination of these fragments indicated that, on the whole, they comprised iron slag, some of which formed a distinctive type of slag known as a ‘smithing hearth cake’. This is likely to have been the result of smithing, which suggests that the building was used as a blacksmith’s workshop.
Places of worship were an important part of residential areas in all of Lancashire’s industrial towns, and Bury was no exception. The first in The Rock Triangle was New Road Chapel, which was built in 1792 on the corner of Chapel Street and Clough Street. It was a two-storey building of plain neo-classical design, with two doorways at the front. The chapel also contained two school rooms, with toilets to the rear, and a small cemetery. The first recorded burial there was in October 1797, and the cemetery seems to have continued in use until 1834.

This building was demolished in 1885, and replaced with the New Road Independent Congregational Chapel, which was designed by Maxwell and Tuke, a local firm of architects. The new chapel conformed to an Early English Gothic style, that gained popularity in ecclesiastical buildings during the nineteenth century. It had seats for a congregation of 850 in ground floor pews and galleries above.
The earliest reference to education in the town dates to 1635-6, when the Reverend Henry Bury bequeathed £300 to Bury Grammar School. This school was refounded by the Reverend Roger Kay in 1726, and catered for those able to afford tuition fees. The question of educating the town’s poorer children was addressed in 1748, when the Reverend J Stanley founded a charity school with a capacity for 80 boys and 30 girls. This was replaced in 1815 by a new schoolhouse, which was known as a National School, from its connection with the Church of England National School Society.

The National School, situated at the corner of Clough Street and Stanley Street, was built by subscription at a cost of £1000. In 1824, the school was attended by 89 boys and 54 girls, of which 43 boys and 40 girls had to be provided with clothing. Although this school formed an important educational centre for much of the nineteenth century, it was closed in the 1880s and was demolished shortly afterwards. The buried remains of a part of the school were exposed during the archaeological excavation. These included a thick sandstone wall, together with an associated cellar and a courtyard.
The archaeological investigation described in this booklet was undertaken as part of the planning process. As part of this procedure, Bury Council is given planning guidance on the potential impacts that new developments may have on archaeology, by the Greater Manchester Archaeological Unit (GMAU), which acts as the archaeological curator for the Association of Greater Manchester Authorities.

If it is felt that the proposed development will have an impact on archaeological remains, GMAU will recommend that the developers fund a programme of archaeological investigation. Normally, a desk-based assessment forms the first phase of this investigation, which will be completed on behalf of the developer by an archaeological consultant, or unit. This assessment considers the presence and likely survival of any potential archaeological sites contained within the proposed development area. In order to do this, the assessment examines historical documents, maps, and photographs, along with the results of any historical or archaeological work completed in the vicinity of the development site. As part of this process, the Historic Environment Record will also be consulted. This record is maintained by GMAU and contains details of all known archaeological sites found in Greater Manchester.
If, following the assessment, it is felt that archaeological remains might be present within the development area, a phase of archaeological excavation will then be recommended. This will initially take the form of an archaeological evaluation, which is usually undertaken by an archaeological unit such as Oxford Archaeology North, and is again funded by the developer. This type of excavation normally involves trial trenching, which targets the areas of archaeological potential identified by the desk-based assessment. The aim of this trenching is to determine the presence, or absence, of buried remains and, if present, to establish their date and state of preservation.

Depending on the results of the archaeological evaluation, a further phase of archaeological excavation may then be recommended. This, often larger scale, excavation focuses on the areas which have been identified by the evaluation as having archaeological significance. This style of excavation often exposes large, open, areas in order to uncover the extent of any significant buried remains. During this phase of excavation, all of the archaeological structures and deposits are excavated and recorded, and all artefacts are collected. The process of archaeological investigation and recording is set out in Planning Policy Statement PPS 5, *Planning for the Historic Environment*, which was published by the Department for Communities and Local Government in March 2010.

Following excavation, the remains of the records and artefacts are ordered, catalogued, analysed, and interpreted. An illustrated excavation report and a site archive are then produced, which are deposited ultimately with a local museum for future researchers to consult.
**Calico:**
a plain-woven cotton cloth, which is usually printed upon (see calico printing). The name stems from the area formerly known as Calicut, in India, from where it was imported to Britain by the East India Trading Company from the seventeenth century.

**Calico Printing:**
the printing of calico (see above) was originally done by hand using wooden blocks, and later with engraved copper plates from the 1750s. By the end of the eighteenth century, calico was being printed using large copper cylinders, which enabled entire lengths of the cloth to be printed much faster. The printing allowed the plain cloth to be styled in a range of patterns and colours.

**Carding:**
a process facilitating the untanglement and removal of the short fibres from the mass of cotton (or wool) by cards. These cards were wooden blocks fitted with handles and covered in short metal spikes set in leather. By working the mass into the spikes, and reversing the hand-cards, ‘cardings’ could be scraped off and later would be spun into thread.

**Crenellate:**
a type of fortification. A licence to crenellate had to be granted by the king in order to fortify a building legally. This typically entailed the building of a parapet, formed by a series of crenelles (cut-out portions) and merlans (solid portions) (see the reconstruction on page 8).

**Felt:**
matted cotton or wool, which is made through exposure to moisture and heat. The resulting mass is then pressed to form sheets.
Flying Shuttle: a faster shuttle with capped, bullet-shaped ends, with rollers that reduced friction. This was patented by John Kay in 1733, who was born in Bury. This was part of a mechanism that allowed the shuttle to be caught at one end, sent across on the track, caught at the other end, and then propelled back. This meant that the operator only touched the shuttle when it needed to be reloaded, allowing fabrics of great width to be woven, and reducing the amount of movement needed to operate.

Fustian: a strong, twilled cloth, with a linen warp and a cotton weft, the production of which increased steadily in the Manchester area during the early seventeenth century. The term is often used to describe a variety of heavy woven cloth prepared for menswear.

Metal-working Slag: a waste product derived from metal-working processes. It forms when iron ore is smelted, and also during the forging of iron objects.

Spindle: a device used to spin fibres into thread, commonly a tapering pin of wood or metal.

Velveteen: a cotton cloth made in the imitation of velvet, with a short, dense pile surface and a smooth back. The term is also sometimes applied to a mixture of silk and cotton.

Manchester, Bolton and Bury Canal: built between 1791 and 1808, the canal was 24.3 km long, and linked Bury and Bolton with Manchester. The majority of freight carried was coal from local collieries. The canal was officially abandoned in 1961, although complete restoration commenced in 2006.
Further Reading

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Williams, M, with Farnie, D A, 1992 *Cotton Mills in Greater Manchester*, Preston

All of the historical maps and images used in this booklet can be found at Bury Art Gallery, Museum and Archives

Historical images can also be viewed at http://www.buryimagebank.org.uk

A copy of the detailed excavation report, together with the project archive and artefacts, has been deposited with Bury Art Gallery, Museum and Archives


Other titles are available from: http://www.gmau.manchester.ac.uk/
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Historical images of Bury, and photographs of the prehistoric and medieval artefacts, have been reproduced courtesy of Bury Art Gallery, Museum and Archives. Bury Council kindly gave permission to reproduce the reconstruction of Bury Castle by Graham Sumner that was published in 1999 in their booklet about the castle, and the aerial view of Castle Steads was supplied by GMAU. The railway plan of Knowsley Street station was supplied by of the Greater Manchester County Record Office, and the Lancashire County Record Office kindly supplied the Plan of the Manor of Bury.

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During the nineteenth century, the Rock Triangle in Bury had been a thriving industrial area with numerous textile mills, engineering works and iron foundries, small workshops, and rows of terraced housing. These buildings had all been demolished by the end of the twentieth century, but their buried remains were excavated by Oxford Archaeology North in 2006-7, in advance of the Rock Retail and Leisure development, built between 2008 and 2010. This booklet charts the history of Bury and The Rock Triangle, and summarises the recent archaeological excavations, which have provided a record of part of Bury’s important and varied industrial past.