



University of Leicester

Archaeological Services

**A Photographic Survey of the Former
BUSM Factory, Ross Walk,
Leicester
(NGR SK 5909 0643)**

Gerwyn Richards




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For: Westleigh Homes

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Summary

University of Leicester Archaeological Services was commissioned by Westleigh Homes to undertake a photographic survey of the former BUSM site at Ross Walk, Leicester. Planning permission has been granted for demolition and re-development of the site for residential use.

In its time, BUSM was one of the biggest employers in the city and one of the world's largest producers of machinery for shoe production. Construction of the site began in 1912 and progressed northwards as more land was purchased and the factory expanded. The vast majority of the buildings date to the inter war years, although there are some more modern buildings as well. During World War II the factory was given over to military production, during which time two of the most interesting buildings were built, a gas decontamination building (72A) and a BCF building (110). The site continued to operate under BUSM ownership until entering receivership in 2000. Since then the site has been operated as a trading estate with the buildings being rented out individually.

The photographic survey provided a permanent visual (photographic) record of the buildings in their current state. The archive will be held by Leicester City Museums, under the museums accession number A10.2009.

1. Introduction

University of Leicester Archaeological Services was commissioned by Westleigh Homes to undertake a photographic survey of the former British United Shoe Machine Factory (BUSM), Ross Walk, Leicester (SK 5909 0643). Planning permission has been granted for the demolition of the existing buildings and the construction of new residential units.

The City Archaeologist, Leicester City Council advised that the proposed works would impact upon the historic buildings. As a result it was recommended that a photographic survey should be carried out to record the buildings prior to any works being carried out.

All work followed the Institute for Archaeologists (IfA) Code of Conduct and adhered to their *Standard and Guidance for Archaeological Investigation and Recording of Standing buildings or Structures*. In addition, Leicester City Council's *Guidelines and Procedures for Archaeological Work in Leicester* was adhered to. *Understanding*

Historic Buildings (English Heritage 2006) has been used as a basis for defining levels of recording.

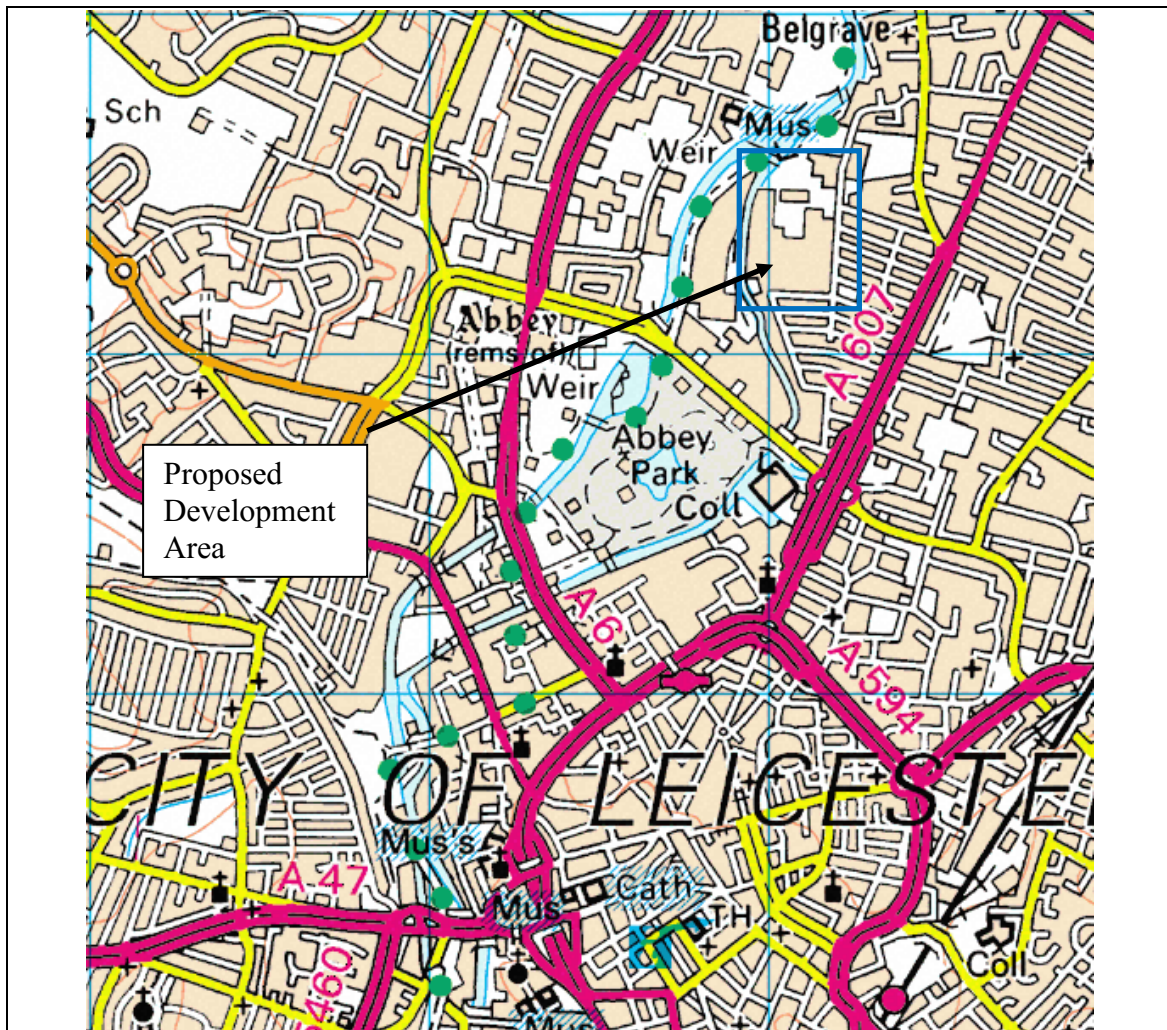


Figure 1. Site location

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The proposed development area is approximately 1.25 kilometres to the north east of the historic urban centre of Leicester. Hildyard Road forms the southernmost boundary of the proposed development area, with Ross Walk to the east and the Grand Union Canal and the River Soar to the north and west. Early cartographic sources indicate the proposed development area remained largely agricultural and undeveloped until the later years of the nineteenth century.

British United Shoe Machinery Company Ltd, or BUSM was formed in 1899 with an amalgamation between of the English branches of the American United Shoe Machinery Company (USM) and an established Leicester engineering company, Pearson & Bennion who manufactured their own shoe machinery and also handled machinery manufactured by some of the pre-amalgamated American companies,

including Consolidated and McKay Lasting Machine Company (Monopolies Commission 1973). BUSM became exclusively entitled to the benefit of USM inventions and patents in the shoe machinery field free of royalties in the United Kingdom. In these early years BUSM and USM effectively had a monopoly over shoe making machinery; in fact USM was declared a monopoly by the US Government in 1960. Between 1898 and 1960 USM and therefore also BUSM developed and sold in excess of 700 new and improved shoe machines and patented in excess of 9,000 inventions. BUSM became one of the world's largest manufacturer of machinery for the production of shoes, no doubt one of the main reason for this was the fact that BUSM machinery was leased to the customer with the stipulation that competitors machinery could not be used in the production line alongside theirs, effectively tying the hands of a customer and some cases forcing competitors out of business. BUSM, as a company was not averse to taking over competitors as well, most notably the Grimson Shoe Machinery Company Ltd in 1930. This company was in financial difficulties and BUSM was interested in was the company's management strength. BUSM also acquired other subsidiaries from USM, including the Boston Blacking Company Ltd, now better known as Bostik (Monopolies Commission 1973).

Initially, BUSM imported the majority of its machinery from USM and was located in buildings between Law Street and MacDonald Road on the south east corner of the proposed development area, the site became known as BUSM I (one). With the implementation of the 1907 Patents Act which encouraged patentees to manufacture in the United Kingdom, an increasing proportion of the machinery was manufactured by BUSM in the United Kingdom. As a result additional capacity was required and through a series of land purchases beginning in 1912 with the corner plot of Ross Walk and Hildyard Road and progressing northwards and culminating in 1948 with the purchase of the northernmost part of the proposed development area. This became BUSM II (two). A third site, BUSM III (three) was purchased in 1942 to the east of Ross Walk (*Figure 2*). The use of Roman numerals has, however caused some confusion for the Post Office, the site of BUSM III is now addressed as 111 Ross Walk, its original number having been lost some time ago (Malcolm Kyle pers. comm).

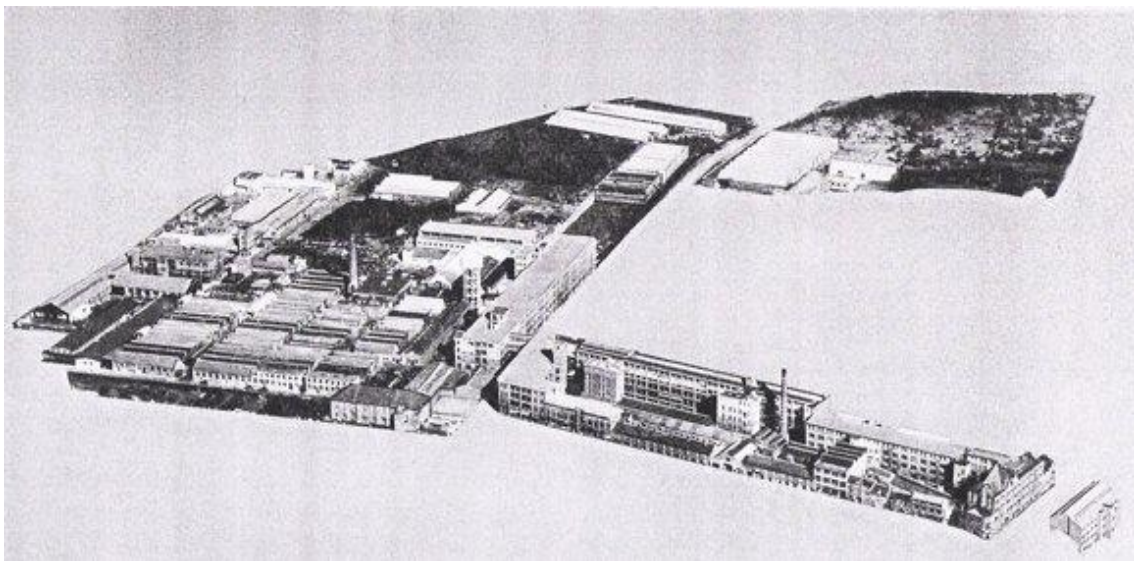


Figure 2 Mid-20 century aerial view of BUSM I, II, & III.

Generally, the chronology of the buildings follow this same south to north development, with the earliest buildings located to the south and the most recent to the north. There are, however some in-fill buildings of later date on the southern side of proposed development area.

During World War II the factory contributed to the war effort with the manufacture of mounts for naval guns and coastal artillery, not the Spitfire parts for Rolls Royce in Derby, as is widely assumed. The factory was extensively camouflaged with walls and roofs painted in a disruptive scheme of brown and green which broke up the lines of the building. While this was not an obvious choice given the surrounding red brick terraced houses, it is assumed that the idea was that BUSM, along with the adjacent Wolsey Factory and the factories fronting Abbey Park Road to the south all similarly camouflaged would, to aerial reconnaissance look like a continuation of Abbey Park to the south. The only attack near the site was a landmine dropped on nearby Abbey Lane, destroying six houses and killing one person.

After the war the factory resumed its pre-war manufacturing and continued to do so until 2000. For exporting shoe machinery to over 50 counties the company was awarded the Queen's Award for Export in 1990. Within a decade, however, the company was in financial difficulties and eventually ceased trading in October 2000, leaving over a thousand former employees without their pensions. A smaller off-shoot of BUSM under the ownership of a venture capital business remained operating until it too ceased trading in 2003.

2. Aims and Methodology

The aim of the survey was to provide a permanent photographic record of the buildings in their current state, prior to alteration or repair, to standards set down by English Heritage (2006).

The photographic survey was undertaken by Gerwyn Richards. Photographs, in 35mm monochrome negative and digital format taken as raw image files and converted to TIFFs (Tagged Image File Format) covered items 1-6 of the English Heritage guidelines (2006, 4; Appendix 4.1.2). The site visits were carried out between June 2nd and June 5th and, in view of access difficulties, a later visit was necessary on August 12th 2009.

The proposed development area contains approximately 40 buildings and other structures of interest, but only 27 are affected by this phase of work and covered by this photographic survey. Building identification numbers had already been allocated whilst the site was owned by BUSM and for sake of continuity these numbers have been retained for the purpose of this report (*Figure 53*). Where a significant internal division was present a letter suffix is added. No previous historic building recording has been undertaken within the proposed development area although trial trenching has been undertaken for the area to the north (Winter 2006).

Orientation: All the buildings detailed in this report are orientated north to south, in most cases the north-south being the long axis, with the principal front being the east facing elevation. Where the long axis of the building is east-west the principal front is

taken to be the south facing elevation. Where the terms 'left', 'right', 'front' and 'back' etc. are used in the report, this is in relation to the principal east or south facing elevation.

3. Description of the Buildings

3.1 Ross Walk Frontage (Buildings 32, 39 & 96, a and b)

Buildings 32, 39, 96 and 96 a & b are by far the largest buildings within the proposed development area and although identified as five buildings, all make up the Ross Walk frontage (*Figure 3, 4, 5 & 6*) and were originally the Assembly Stores and Offices of BUSM. The block is four stories tall, with a cellar. The southernmost Building 32 is the earliest, dating to 1924. The building has a steel and poured concrete frame, the columns being concrete and joists being steel. Externally the building has a concrete frame with brick in-fill and some of the original steel Crittall-style windows surviving on the ground and first floor. The building was originally linked to BUSM I across the road by a two storied pedestrian bridge at first floor level, evidence of which can still be seen within the third bay frontage. The building is a starkly modernist structure in a style which was increasing in popularity for factories at the time, reflecting the post-war optimism of the 1920s and is in stark contrast to the more traditional, conservative factory buildings to the rear. Internally, with the exception of the original Maple flooring, there is nothing of architectural or historical interest remaining.

Immediately to the north of 32 is Building 39, which dates to 1935 and comprises poured re-enforced concrete frame of 10 bays, with once again some of the original windows surviving. The division with the 1924 building (32) is clear as 39 is a fully concrete build with no brick used. Again some of the original Crittall-style windows survive at ground floor and first floor level. It is also possible, however, that this change in windows reflects the division of the building between assembly (ground floor/first floor) and offices (second & third floor). An attempt has been made to modernise the office space with new windows while the factory floors retained their original windows. Once again, there is nothing of historical or architectural interest remaining within the building, with the exception of the original maple flooring and inserted steel work, the exact purpose of which is unclear.

Abutting the northern end of Building 39 is Building 96 which consists of two phases, one having been built in 1938, abutting, and virtually identical, to Building 39. The only visible difference is the date embossed on the rainwater hoppers, just below the eaves level. The northernmost part of building 96 is clearly a later build consisting of a poured concrete frame with a brick clad stair turret on the northern wall (96b), to the west there is 96a, a contemporary two storied wing. Building 96a was built during the 1980s and is one of the latest buildings within the proposed development area. Below building 96 there is extensive cellarage, which, in view of a blocked doorway at the northern end and a blocked stairway at the southern end, may have originally been larger. The cellar itself is a rather unusual design, as there are concrete stanchions, (*Figure 8*) approximately four to five metres square which leaves a space which is not much larger than a corridor. It was used as an air raid shelter during World War II, it is possible, therefore, that original smaller stanchions were enlarged and strengthened to

provide greater protection from bombing. There are a number of World War II signs which have not been painted over still visible within the cellar (*Figure 7*). There is also an extensive network of wall and ceiling mounted ducts providing ventilation, for which original plans and instructions dating to 1939 still survive, framed in one of the rooms. All of the doors appear to date from this period and have one way opening vents and rather large and overly ornate latches.



Figure 3 Building 32, Ross Walk Frontage.



Figure 4 Buildings 39 & 96, Ross Walk Frontage.



Figure 5. Building 32, Western Elevation.



Figure 6. Building 39, Western Elevation.

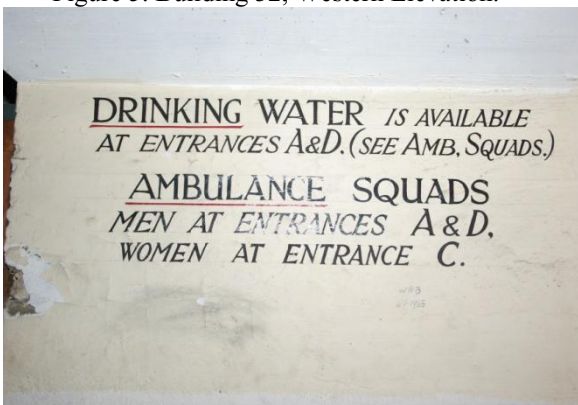


Figure 7 Building 96, WWII Sign in Cellar.



Figure 8 Building 96, General View of Cellar.

3.2 Building 33

Building 33 is located in the south-easternmost corner of the proposed development area, adjacent to the junction of Hildyard Road and Ross Walk (the actual corner plot is beyond the boundary of the BUSM site and the occupying building will remain).

Building 33 was originally Regent Rebuild, in which sold and leased machines were returned for overhaul, repair and rebuild. The building, itself is of red-brick with blue brick detailing, Welsh slate roof and is rather squat in appearance (*Figure 10*). Internally, it is the roof which is the most interesting feature (*Figure 11*) comprising a king post design with a pair of raking struts; the king post is an iron rod and there are two further iron rods meeting the tie beam adjacent to the struts. There was further iron banding re-enforcing the joint between the tie beam and principal rafter. Once again there are maple floors, but with occasional concrete pads, suggesting the positions of original machinery.

The western elevation of 33 is painted white; this might support the site plan (*Figures 9 & 52*) which records a number of since demolished buildings adjoining this western elevation. One of these was an apparently temporary building of tubular steel built during World War II and only recently demolished (Malcolm Kyle Pers. Comm).

Original drawings and information supplied by the client relating to BUSM ownership of the site indicate this part of BUSM II was not purchased until 1912, although building 33 has the appearance of a building which may, slightly pre-date this date.

On the northern face of 33, separating it from Building 32 there is a rather ornate vehicle entrance with a pair curved gatehouses with attractive curved Crittall-style windows (*Figure 12*). It is likely that one of these originally housed a clocking-on machine.



Figure 9 Building 33, West elevation.



Figure 10 Building 33, Northern elevation.



Figure 11 Building 33, Internal.



Figure 12 Vehicle Entrance Between 32 & 33.

3.3 Building 35

Building 35, a small single-storied, flat-roofed building with a large vehicle door on the northern wall, is located between Buildings 33 and 46. (*Figure 13*). The building is clearly mid-20th century in date and originally housed BUSM's own fire engine. Based upon a Land Rover the appliance was apparently still housed within the building until quite recently (Malcolm Kyle Pers. Comm). Fire fighting was obviously a high priority for BUSM as there are a large number of hydrants throughout the site, the covers of which are all stamped with the letters BUSM in order that they can be quickly identified by the fire service.

3.4 Building 40

Building 40 is directly to the west of building 32. It is a single-storey red brick building, with an unusual pitched roof with an area of flat roof on each face (*Figure 14*). Along the ridge there are a large number of flues, suggesting that the building may have originally had a "hot" use. Its final use under BUSM is recorded as being a paint shop. There are tall steel framed windows in pairs along the eastern elevation with an off-centre main door, while another later door has been inserted towards the southern end of the building, leaving part of the original windows above. There are a number of very ornate, original, rainwater hoppers along the front (easternmost) elevation; such an unnecessary flourish perhaps shows the confidence BUSM had at the time.

Internally, the building's current use as a paint and powder coating shop with the overhead ducting conceals any trace of the building's original use as, it is difficult to establish what is original and what is modern. The roof is a simple Fan Truss and there are roof lights along the ridge. There are blocked windows on the rear (western) wall which suggests that the covered area between building 40 and building 42 is a later addition. There is also an inserted breeze block-built wall creating a single bay space at the northern end of the building.



Figure 13 Building 35, Northern & Western Elevations.



Figure 14 Building 40, Eastern Elevation.

3.5 Building 42

Building 42 is located immediately west of Building 40 and in some places joined to it; it is the larger of the two buildings and was originally BUSM's sheet metal department. Again it is a red brick building with a north-light roof (*Figure 15*). On the rear (western) wall there are tall arched steel framed windows, which along with the north lights provide the building with light. Internally there is nothing to confirm the original use of the building, although a solitary overhead crane does confirm that heavy work was carried out. The floors are once again of Canadian Maple. The steel work for the trusses come from the Frodingham Iron and Steel Company on Humberside, while the attractive cast iron columns, in contrast came from the local W. Richards & Son foundry in Leicester and are stamped 1927 and are themselves rather attractive castings. Both the northernmost and southernmost bays have been partitioned with modern breeze block walls.



Figure 15 Building 42 Western Elevation.



Figure 16 Building 42 Later Bay Added to the North.

3.6 Building 44

Building 44 has by far the largest footprint of all the buildings within BUSM, but is only single storey and is one of the earliest BUSM buildings, unfortunately it has been largely demolished prior to this photographic survey being carried out (*Figure 17*), and leaving only the external walls and some other limited detail. The building was originally BUSM's I.V.I tack & nail plant and was a single storey red brick building with a north light roof. Along the westernmost wall there are a series of W.Cs with no access from the factory floor. There area also a range of small building along the easternmost wall including a stump of a chimney, suggesting this building originally had its own boiler. Limited remains of a drive shaft can be seen on the eastern wall (*Figure 20*); an electric motor had apparently been retrofitted to power the shaft and was still in position.

What was left of the roof steel work was identical to that recorded within Building 42. There were no foundry marks on the columns but they were identical in appearance to those within Building 42 and are probably from the same foundry. Parts of the floors, of Canadian Maple, also remained, despite the demolition work. Hardwood was used as flooring in preference to concrete because of its durability. In the factory environment oil would combine with metal swarf and other particles creating a mixture not unlike a cutting paste which concrete could not withstand, but hardwoods could. The underside

of each board was marked with makers' mark of MUSKOKA RED DEER BRAND MADE IN CANADA. Email contact with the company confirmed that it is still trading as the Muskoka Prefinished Hardwood Floors in Ontario, having been trading for over "100 years" and exported huge quantities of maple flooring to the United Kingdom during the early years of the 20th century. Towards the southern end of the building there were extensive areas of armoured floor, steel tiles were laid in areas where chemical reaction or excessive heat was likely to damage the maple floor. Other, limited areas of armoured floor could also be seen within the building, providing original machine locations.

There was a two-storied bay to the south, fronting Hildyard Road; the building was in far too precarious condition due to incomplete demolition work to allow close examination but it appeared to have been used as an office. On Hildyard Road there is a door marked 'reception', over which there is fan light of stained glass, which is unlikely to have been a workers entrance. The bay has a flat roof and tall paired windows at ground floor level with moulded concrete sills and mullions. As with the other buildings ornate rainwater hoppers are again evident.

One of the most significant features of this building was the unusual angle of the one of the northern gables (*Figure 18*). Early cartographic sources record an unusual boundary following the same alignment and it appears, therefore, that the building respected this boundary. Extensive traces of camouflage paint can still be seen on the exterior faces of the building; this is evidence of the factory's World War II history when the factory produced mounts for naval guns and coastal artillery, not the Spitfire parts, most claim were produced at the factory (Malcolm Kyle pers. comm.). It is quite common to claim that during the war a particular factory was turned over to Spitfire production, where in fact the reality was much more mundane, perhaps it is only natural for people to want to be associated with something more glamorous.



Figure 17 Building 44 showing limited remains.



Figure 18 Building 44, showing the unusual angle of the northern gable.



Figure 19 Building 44: Remains of roof structure.



Figure 20 Building 44, original driveshaft.

3.7 Building 46

Building 46 is located to the east of building 44 and has an identical bay to that of 44 fronting Hildyard Road (*Figure 21*). To the rear (north) of this there is a factory floor, which although still roofed, is also in a ruinous condition. Generally it is identical in appearance to 44 and was also part of the Tack & Nail plant; abundant warning signs indicate the building originally housed the molten salt bath, a process of heat treating metal components, evidence of which may be seen in the large concrete pad towards the rear of the building. The roof trusses are again identical, although no clear makers stamp could be seen, while the columns are identical in appearance to those seen within building 44, but bear a different foundry stamp, originating from RUSSELL & SONS LEICESTER. There is an unusual line of dormer windows in the in the south-facing roof of the central bay, the exact purpose of this is unclear.

Externally further remnants of camouflaging can be seen on the northern elevation along with blanks left in the brickwork to allow the building to be extended to the north, should the need have arisen (*Figure 22*).



Figure 21 Building 46, Eastern Elevation.



Figure 22 Building 46, Northern elevation with Camouflage.

3.8 Buildings 49 & 50

Buildings 49 and 50 are located immediately to the west of the shell of Building 44. It was originally a single building but has since been divided into three; 49, 50 and a building fronting Hildyard Road which is not included in this survey. The buildings will be described together in this report. As with 44 and 46, Building 49 is in red brick with a north-light roof and was again part of BUSM's I.V.I works, this time housing warehousing, the fabric department and the Pilot Plant. It is identical in appearance to 44 and 46, the only noticeable being the different rain water hoppers. Once again there are remnants of camouflaging on both the eastern and western elevations (*Figure 23*). A new bay has been added to the northern end of the building, the style of the earlier building having been followed, but the brickwork is clearly late 20th century in date.



Figure 23 Building 49, Eastern Elevation.



Figure 24 Building 49, Eastern Elevation.

3.9 Buildings 51 & 51A

Buildings 51 and 51A are two very large structures located towards the northern end of the proposed development area. Both are mass produced steel-framed buildings clad in brick and corrugated asbestos cement sheets and originally housed BUSM's machine shops (*Figures 25 & 26*). Building 51A (the northernmost of the two) houses an overhead crane, built by Roberts, which appears to predate the building, possibly having been bought second hand and installed in the building. (The crane is thought by many former BUSM staff to be haunted (Malcolm Kyle pers. comm.)).

Although of limited historical and architectural interest, these building illustrate the development and expansion of BUSM in the later years of the 20th century. They are also a stark example of the difference in industrial buildings between the early and later 20th century.



Figure 25 Building 51, Eastern Elevation.



Figure 26 Building 51a, Eastern Elevation.

3.10 Buildings 54 & 55

Buildings 54 and 55 are located in the south-westernmost corner of the proposed development area, to the west of building 49, and were originally used as fabric stores by BUSM (*Figures 28 & 30*). Both are constructed with a Belfast roof truss; originally built by D. Anderson and C^o of Belfast (Brown et al 1995; Brunskill 1985), the truss consists of a lattice of diagonally interlaced thin planks. This produces a strong, lightweight, long span truss cheaply and using relatively unskilled labour. The design originated during World War I and remained common in the early decades of the 20th century, although such trusses are becoming increasingly rare.

Building 54 is largely open-sided supported on concrete columns, while Building 55, on the other hand has red-brick walls with Crittall-style windows. Discolouration visible on the trusses also suggests that the building had been partitioned lengthways (*Figure 27*). Interestingly one of the northernmost trusses of building has suffered a structural failure causing the roof to collapse (*Figure 29*); whether this was caused by an impact or a design or build flaw is unclear.



Figure 27 Building 55, Internal.



Figure 28 Building 55, Western Elevation.



Figure 29 Building 54 Failure in Belfast Truss.



Figure 30 Building 54, Eastern Elevation.

3.11 Buildings 65C & E

Building 65C is in red-brick with brick piers and a corrugated asbestos cement roof (*Figure 32*). There is a large vehicle door on the western elevation and two smaller pedestrian doors on the southern elevation. Internally the roof is supported on a simple wooden truss; the building is difficult to date but is likely to be inter-war. There is no clear evidence of the buildings original BUSM role. Building 65E (*Figure 31*) is located immediately to the north of 65C and houses an electrical sub-station (with no internal access), and is in all likelihood the earlier of the two buildings. There are some interesting flourishes within the brickwork, most notably the use of bull nosed bricks on the corners. The rain water hoppers on this building are identical in appearance with those on buildings 49 and 50.



Figure 31 Building 65e, Western elevation.



Figure 32 Building 65c, Southern elevation.

3.12 Buildings 67 & 67A

Both Buildings 67 and 67A are located towards the centre of the proposed development area and are relatively modern buildings, the Fletton bricks being clearly post-World War II. Building 67 (the larger of the two) has an unusual poured concrete frame which is not dissimilar in appearance to a timber cruck frame (*Figure 33*). The building consists of two bays, the westernmost being the smaller of the two but having been extended to the south. The roof is of corrugated asbestos cement sheets.

Building 67A is located to the west of building 67, it is very similar in appearance, although there is no concrete frame visible (*Figure 34*). The roof is corrugated asbestos cement sheets and the eastern wall is part glazed part pre-fabricated concrete sheets. There was no indication of either buildings original use.



Figure 33 Building 67, Southern & Western elevations.



Figure 34 Building 67a, Northern elevation.

3.13 Buildings 68 & 69

Buildings 68 and 69 are the original boiler house and associated buildings powering the site (*Figures 35 & 36*). Unfortunately excessive asbestos contamination prevented any internal examination; a limited view through the windows indicates that there are several modern boilers still in place. As expected the boiler house is a substantial red-brick building with flat roof with sky lights. There is a large vehicle door towards the northern end of the eastern elevation, while the centre of this elevation has an unusual extension of glass bricks, the exact purpose of which is unclear. There appears to be a parapet and a brick cornice at height, and the corners of the building are finished in bull nosed blue bricks. As with a number of other buildings there are traces of World War II camouflage visible on the building. Coal for firing the boiler was originally bunkered towards the northern edge of the proposed development area and moved by loading shovel to the front of the boiler house where it was loaded into a hopper which transferred the coal into the boiler house via an opening two thirds of the way up the building. On the south-westernmost corner of the boiler house is an octagonal chimney.

The boiler house has been extended to the south with the construction of Building 69 which is very similar in appearance but has a very unusual finish to the brickwork on the south-east corner. The southern elevation is well sheltered from the elements and as a result the World War II camouflage has survived exceedingly well.



Figure 35 Building 68 boiler house.



Figure 36 Building 69, eastern elevation.

3.14 Building 71

Building 71 is located directly to the north of Building 44, and is red-brick with blue-brick detail and a flat roof. It is very similar in style and appearance to the other early 20th century buildings, so is likely to be contemporary. Its original BUSM role is unknown (*Figures 37 & 38*).



Figure 37 Building 71, southern elevation.



Figure 38 Building 71, northern elevation.

3.15 Building 72

Building 72 abuts the southernmost wall of Building 51. Unlike 51 it is brick-built with a limited steel frame (*Figures 39 & 40*), with a roof of modern box profile polycarbonate. The steel bears the makers stamp LANCASHIRE STEEL CORP^N ENGLAND; the corporation was formed in 1930 by the amalgamation of a number of iron and steel companies, primarily in Manchester, with the principal works at Irlam now in Greater Manchester. The corporation was nationalised by the Labour Government in 1951 only to be de-nationalised by the Conservative Government shortly afterwards. Finally, with the formation of British Steel, the corporation along with all the United Kingdom's steel producers was nationalised in 1967 (Caswell et al 2002).

Under BUSM ownership the building served as stores for the machine shops (buildings 51 & 51A), housing offices, metal stores, machine part stores and electronic assembly.



Figure 39 Building 72, Southern Elevation.



Figure 40 Building 72, Southern Elevation, Steel Frame.

3.16 Building 72A

Building 72A, despite its appearance is one of the more interesting buildings within the proposed development area (*Figure 41 & 42*). It was constructed during the Second World War as a gas decontamination centre, serving the surrounding areas of Leicester. Fortunately it was never used and after the war, BUSM retained the building as a medical centre, offering not only factory first aid but also other services such as dentistry and physiotherapy; what would now be called occupational health. BUSM was by all accounts a very benevolent employer (Malcolm Kyle pers. comm.).

Evidence of the building's military past is clear in that it was built to be "bombproof". Evidence of this can be seen where partial demolition has occurred on the north-westernmost corner, where the walls are in excess of 400mm (16inches) thick. The flat roof has been re-inforced with both steel rods and a layer of locksheets, modular interlocking steel panels, which were developed during the war. The roof itself is over 400mm (16inches) thick. There are also external covers over all the vents (*Figure 43*), allowing the building to be sealed in the event of a gas attack. No doubt all the windows and doors had similar covers but they would have been removed soon after the war to make the building more user-friendly.

Internally, there are still *in-situ* black out covers over the smaller windows and skylights (*Figure 44*) as well as a clear division of space with two large treatment rooms with floor to ceiling tiled walls and tiled floors where decontamination would be carried out. There are smaller treatment rooms and offices off these larger rooms.



Figure 41 Building 72a, Eastern elevation.



Figure 42 Building 72a, Northern elevation.



Figure 43 Building 72a; closing air vents.



Figure 44 Building 72a: internal black out cover.

3.17 Building 94

Building 94 is again one of the more recent buildings, like 51 and 51A, a mass produced steel-framed building clad in corrugated asbestos cement sheets and brick. Under BUSM it was the Footwear Materials warehouse. Again of limited historical and architectural interest, it does contribute to the understanding of the development and evolution of the site (*Figure 46*).



Figure 45 Building 128.



Figure 46 Building 94.

3.18 Building 110

Like 72A, Building 110, despite its appearance, is one of the more interesting buildings within the proposed development area (*Figure 47*). The building is of pre-fabricated reinforced concrete, known as a BCF (Basalt Continuous Fibre). As re-enforced buildings, being pre-fabricated in a factory for on-site assembly means they can range in size from one or two bays up to the very large example seen here. Such buildings were used extensively during World War II, although this was assembled in 1938. Redundancy and corrosion of the re-enforcing fibres causing the concrete to disintegrate (of which there are very clear examples visible on this building) means examples of this type of building are becoming rare. Experimentation with basalt fibres re-enforcing only began in the US in 1923 (Newby 2001), so this building is an early example. It soon became apparent that the basalt fibres were very prone to alkali reaction within Portland cement causing the concrete to rapidly disintegrate (Dhir et al 2002). Although Building 110 has a number of visible reactions it is nowhere near as severe as in other cases (*Figure 48*). It is possible, therefore that there is a slight difference in this early building which has slowed the rate of alkali reaction.

Under BUSM ownership the building was used as an oil store and the overhead cranes inside suggest other heavier work may also have been carried out within the building.



Figure 47 Building 110, southern & eastern elevations.



Figure 48 Building 110, detail of alkaline reaction.



Figure 49 Building 110; internal.



Figure 50 Building 110; construction detail.

3.19 Building 128

Building 128 (*Figure 45*) is one of the most modern buildings within the proposed development area. It is a mass produced steel-framed building clad with brick and box profile polycarbonate sheets. As with the other later buildings this too offers an insight into the evolution of the site and an even starker example of the difference between early and late 20th century industrial architecture. Under BUSM ownership it was used as the Footwear Materials warehouse with raised loading bays on the west facing elevation and a pedestrian access via steps on the southern elevation.

3.20 Other Structures

There are a number of other structures within the proposed development area including two large bunded oil tanks adjacent to building 67 (*Figure 51*). The most significant, however, is the concrete water tower, built in 1954 which is over 36metres (120 feet) tall and holds 50,000 litres. The huge tank is supported on impossibly thin looking concrete legs (*Figure 52*) and is a substantial land mark when viewed from the north and west, however due to its proximity to the equally tall Ross Walk frontage buildings it is invisible from the east.



Figure 51 Oil storage tanks.



Figure 52 Water Tower, with chimney in Background.

4. Conclusion

The BUSM factory is a fine example of a 20th century industrial site, where aspects of its origins, development and eventual collapse are clearly to be seen within the site. The company originated in small scale manufacture located in small workshops between Law Street and MacDonald Road. After a link up with an American company, possibly described as an early example of a multi-national company a green field site was bought and new purpose-built building constructed on the proposed development area. This move, more than any other was key to BUSM success, rival companies who continued

in small, unsuitable premises were simply unable to compete with BUSM. The confidence of the company could be seen in grand modernist buildings fronting Ross Walk.

Evidence of continued 20th century development is apparent throughout the proposed development area including the site's contribution to the war effort. Traces of camouflage paint still adhere to a number of the buildings and two significant World War II era buildings survive within the area.

Unlike the vast majority of such sites, development continued after the war. New buildings, side by side with the older buildings provide an excellent overview of the remarkable change in industrial building design and construction. Gone are the ornate red-brick buildings with their north-light roofs, so long a feature of the urban landscape, to be replaced by mass produced steel framed, sheet clad buildings which appear, almost overnight, such was the ease and speed of construction. The development of such building signalled the beginning of the end of such sites as BUSM, as their size required new purpose built sites with improved access, resulting in the abandonment of such confined urban areas.

As well the growth, the decline of the site is also apparent with the bankruptcy of BUSM and the sale of the site, United Kingdom manufacturing was never in a position to compete financially with developing countries in the last years of the twentieth century. The new owners partitioned the buildings and let them to small businesses operating the site as a trading estate. Despite being detrimental to the site as a whole and its buildings, this move was undoubtedly beneficial to the community, providing start up businesses and small businesses with affordable buildings with flexible terms.

BUSM had evolved from small scale manufacture to Leicester's largest employer and a world leader in the manufacture of shoe machinery. Then being no longer able to compete with cheaper overseas competitors the company went bust.

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6. Archive & Publication

The site archive consists of

- 1 A1 paper drawing showing building identification numbers
- 1 A1 paper drawing showing land acquisition
- 1 A2 permatrace plan showing building identification
- 1 A3 permatrace drawing showing trench location plan
- CD containing 450 digital images
- 425 Black & White negatives and contact prints
- 13 A4 Contact sheets
- 13 A4 photo record sheets
- 6 A4 Trench recording sheets
- Unbound copy of this report (ULAS Report Number 2009-096)
- Unbound copy of ULAS Report Number 2009-094, An Archaeological Evaluation of the Former British United Shoe Machine Factory, Leicester (NGR SK 5909 0643).

The archive will be held at Leicester City Museums under the Accession Number A10.2009

A version of the summary (above) will be submitted to the editor of the local journal *Transactions of Leicestershire Archaeological and Historical Society* for inclusion in the next edition.

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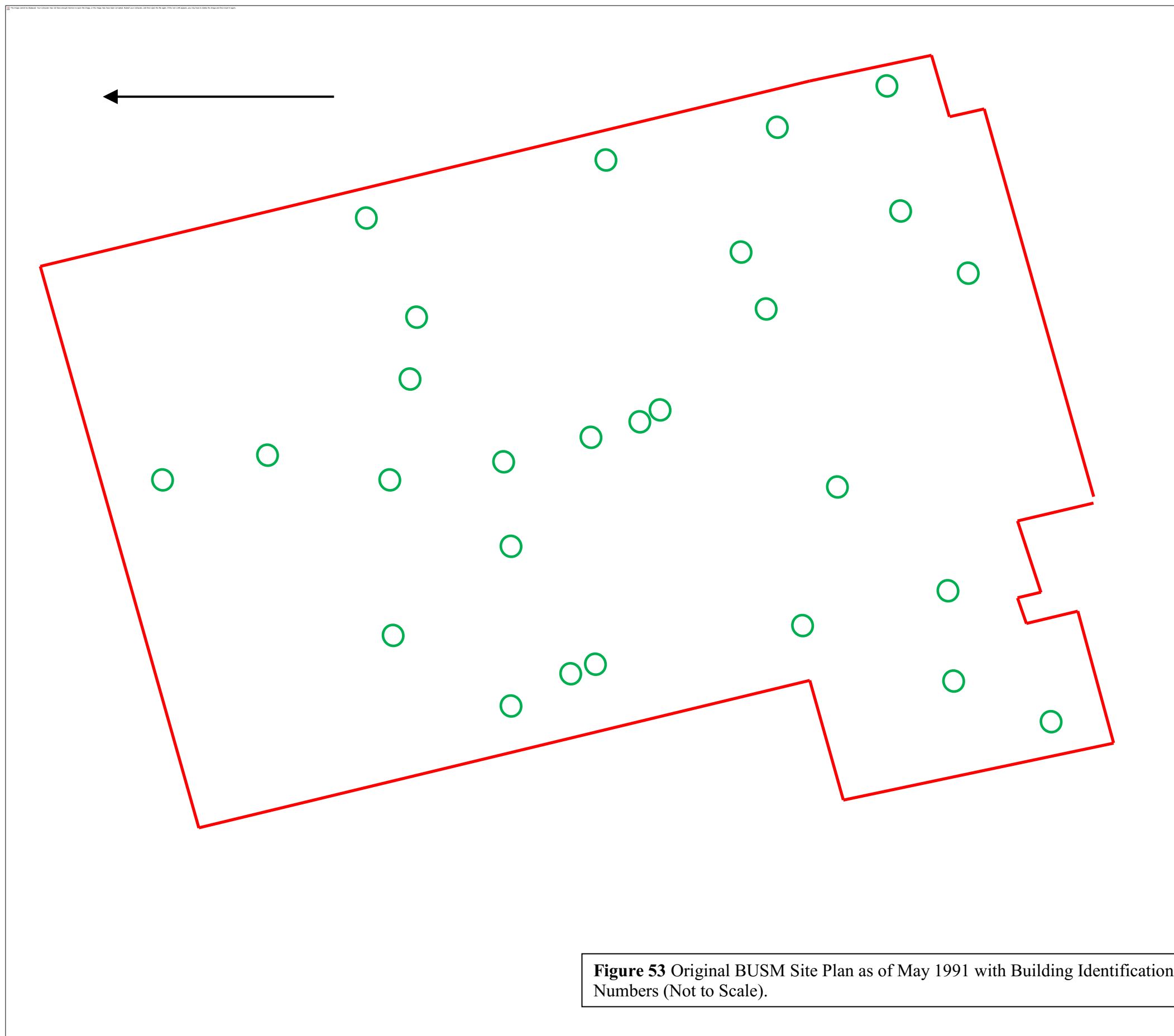




Figure 54 Aerial Image of Proposed Development Area Prior to Partial Demolition of Southernmost Buildings.

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389	389	96	Original Door.	
390	390	96	Original Door.	
391	391	96	Detail of Latch and Vent on Door.	
392	392	96	Detail of Latch and Vent on Door.	
393	393	96	Wartime Signage in Cellar.	
394	394	96	Wartime Signage in Cellar.	
395	395	96	General View Along Central Cellar Corridor.	
396	396	96	General View Along Central Cellar Corridor.	
397	397	96	Detail of Vent Opening on Wall Mounted Ducting.	
398	398	96	Detail of Vent Opening on Wall Mounted Ducting.	
399	399	96	Detail of Vent on External Door.	
400	400	96	Detail of Vent on External Door.	
401	401		Building Formally BUSM Social Club on Hildyard Road.	S
402	402		Building Formally BUSM Social Club on Hildyard Road.	S
403	403	51	West Facing Elevation.	E
404	404	51	West Facing Elevation.	E
405	405	51A	West Facing Elevation.	E
406	406	51A	West Facing Elevation.	E
407	407		Building Formally BUSM I on Belgrave Road.	SW
408	408		Building Formally BUSM I on Belgrave Road.	SW
409	409		Building Formally BUSM I, Frontage Detail.	
410	410		Building Formally BUSM I, Frontage Detail.	
411	411		Building Formally BUSM I, Frontage Detail.	
412	412		Building Formally BUSM I, Frontage Detail.	
413	413		Building Formally BUSM I on Law Street.	SW

414	Building Formally BUSM I on Law Street.	SW
415	Building Formally BUSM I on Law Street.	SW
416	Building Formally BUSM I on Law Street.	SW
417	Building Formally BUSM I on Law Street, Frontage Detail.	
418	Building Formally BUSM I on Law Street, Frontage Detail.	
419	BUSM, Looking West Along Law Street.	W
420	BUSM, Looking West Along Law Street.	W
421	BUSM From Between Law St & MacDonald Rd.	WNW
422	BUSM From Between Law St & MacDonald Rd.	WNW
423	BUSM From Between Law St & MacDonald Rd.	WNW
424	BUSM From Between Law St & MacDonald Rd.	WNW
425	BUSM, Looking West Along Cooper Street.	W
426	BUSM, Looking West Along Cooper Street.	W
427	BUSM, Looking West Along Wand Street.	W
428	BUSM, Looking West Along Wand Street.	W
429	BUSM, Looking West Along Coral Street.	W
430	BUSM, Looking West Along Coral Street.	W
431	Reliance Works on Coral Street.	NE
432	Reliance Works on Coral Street.	NE

Appendix 2

UNIVERSITY OF LEICESTER ARCHAEOLOGICAL SERVICES

Design Specification for Photographic Survey

Former BUSM Works, Ross Walk, Leicester
(SK 5909 0643)

For
Westleigh Homes

Planning Authority: Leicester City Council

1 Introduction

1.1 *Definition and scope of the specification*

This document is a design specification for a photographic survey at the above site, in accordance with DOE Planning Policy Guidance note 16 (PPG16). The fieldwork specified below is intended to provide a record by photography of the existing structures on the site prior to demolition, at the request of the Planning Authority and detailed in their *Brief for Phase 2 of archaeological evaluation and building recording at Ross Walk, Leicester* (LCC 26.03.2009).

1.2 The document provides details of the work proposed by ULAS on behalf of the client.

2. Background

2.1 *Context of the Project*

2.1.1 Development proposals on the site consist of the demolition of the existing buildings prior to residential development.

2.1.2 The proposed development site lies north of Leicester city centre in Latimer ward to the east of the Grand Union canal. The area for the proposed development includes several buildings of the former British United Shoe Machinery Company (BUSMC).

2.1.3 No previous historic building recording has been undertaken on the site although trial trenching has been undertaken for the area to the north (Figure 1; Winter 2006).

3. Archaeological Objectives

3.1 The purpose of the archaeological work is detailed in the Brief 4.10-4.14 and may be summarised as follows:

- ‘The recording by photography of the buildings that is to be with specific attention given to those elements proposed for demolition, conversion and/or alteration. This work to be undertaken to a standard that will allow the future interpretation of the building within the context for which it was originally designed and which subsequently evolved.’
- To produce an archive and report of the results.

4. Methodology

4.1 *General Methodology and Standards*

4.1.1 The photographic record of all main, accessible, areas of the standing building on the site is required, and that as this entails total loss it should be made to Level 2 of the English Heritage ‘Understanding Historic Buildings’ (2006).

4.1.2 The specific levels of detailed required include items 1-6 of the English Heritage specification for photography.

Item 1: General view or views of the exterior of the building.

Item 2: The overall appearance of principal rooms and circulation areas.

Item 3: Detailed coverage of the building’s exterior appearance.

Item 4: Any external detail, structural or decorative, which is relevant to the building's design, development and use and which does not show adequately on general photographs.

Item 5: The building's relationship to its setting, to other buildings, or to a significant viewpoint. The survey will aim to identify the functions of the various buildings and how the complex worked

Item 6: Internal detail, structural and decorative, which is relevant to the building's design, development and use, and which does not show adequately on general photographs.

4.1.3 Photographs will be taken in 35mm format using both black and white print and colour digital images as appropriate.

4.1.4 All work will follow the Institute for Archaeologists (IfA) Code of Conduct and adhere to their *Standard and Guidance for Archaeological Investigation and Recording of Standing buildings or Structures*. In addition, Leicester City Council's *Guidelines and Procedures for Archaeological Work in Leicester* will be adhered to.

4.1.5 Staffing, Recording systems, Health and Safety provisions and Insurance details are provided.

5. Report and Archive

5.1 The full report in A4 format will usually follow within eight weeks of the completion of the fieldwork and copies will be directed to the client, the City Archaeologist for Leicester City Council (1 copy) and to the Leicester City Historic Environment Record (1 copy).

5.2 The report will include consideration of:

- The aims and methods adopted in the course of the work.
- The location, date, significance and quality of the building.
- Summary.
- The location and size of the archive.

6 Publication and Dissemination of Results

6.1 A summary of the work will be submitted to the local archaeological journal, the *Transactions of the Leicestershire Archaeological and Historical Society*. A larger report will be submitted for inclusion if the results of the evaluation warrant it.

7. Copyright

7.1 The copyright of all original finished documents shall remain vested in ULAS and ULAS will be entitled as of right to publish any material in any form produced as a result of its investigations.

8. Timetable

8.1 It is envisaged that the photographic survey will be able to be completed within one day. It is scheduled to be carried out during w.c 01.06.2009.

9. Health and Safety

9.1 A Risks assessment form will be completed prior to work commencing on-site, and updated as necessary during the site works.

10 Insurance

10.1 All ULAS work is covered by the University of Leicester's Public Liability and Professional Indemnity Insurance. The Public Liability Insurance is with St Pauls Travellers Policy No. UCPOP3651237 while the Professional Indemnity Insurance is with Lloyds Underwriters (50%) and Brit Insurances (50%) Policy No. FUNK3605.

11. Monitoring arrangements

11.1 Unlimited access to monitor the project will be available to both the Client and his representatives and Planning Archaeologist subject to the health and safety requirements of

the site. Notice will be given to the Leicester City Archaeologist before the commencement of the archaeological survey in order that monitoring arrangements can be made.

11.3 Internal monitoring will be carried out by the ULAS project manager.

12. Bibliography

English Heritage 2006 *Understanding Historic Buildings*, English Heritage

Winter, M., 2006 *Archaeological evaluation: Former BUSM Works Ross Walk, Leicester*. ASC 822/LRW/2

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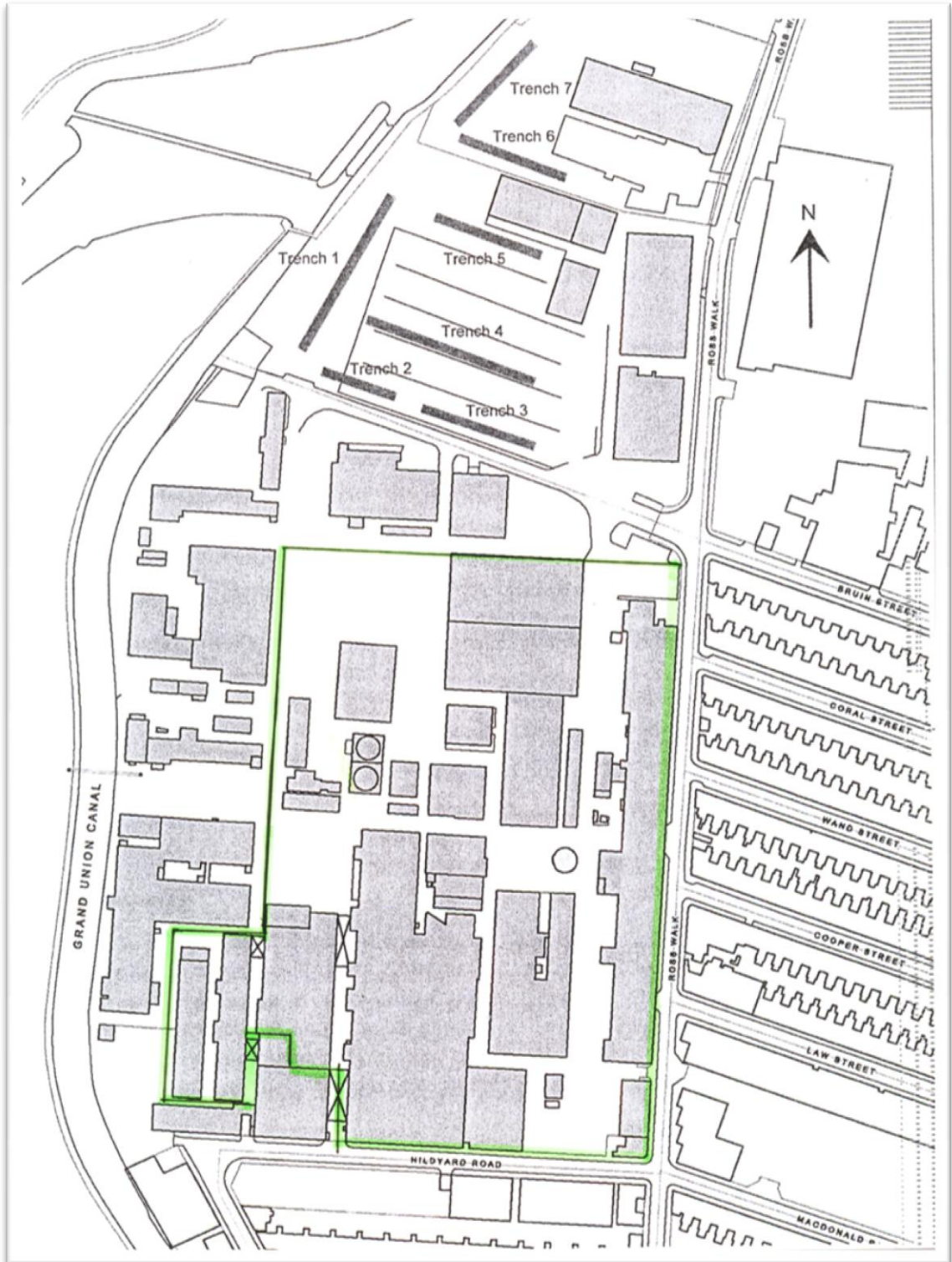


Fig. 1 Plan of the application area with area for this phase of development outlined

APPENDIX 1

Draft Project Health and Safety Policy Statement:

**Former BUSM Works, Ross Walk, Leicester
(SK 5909 0643)**

**For
Westleigh Homes**

Planning Authority: Leicester City Council

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A risks assessment will be produced by on-site staff, which will be updated and amended

1. Nature of the work during the course of the survey

1.1 The work will involve internal and external photographic record of the existing buildings.

2 Risks Assessment

2.1 *Working within a derelict building.*

Precautions. University of Leicester Archaeological Services has been led to believe that it is safe to enter the majority of the building.

The archaeological building recorder will only enter rooms that they feel are safe.

2.2 *Other risks*

Precautions. If unforeseen hazards being encountered e.g. pigeon guano or other contaminants or hazards are identified, such areas will not be entered, and the client will be informed of the risk.

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