BUILDING RECORDING AT FORMER FORD FOUNDRY, LEAMINGTON SPA, WARWICKSHIRE

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Project 3785 Report 1882

Contents

Re	po	rt

1. Planning background	
	d results
9 1	
C	
e e e e e e e e e e e e e e e e e e e	
\mathcal{E}	
	,
, ,	
` ` ` '	
6. Discussion	
	10
	1
	1
	1
•	12
Figures	
Figure 1 Location of site	
Figure 2 HER records in the vicinity of the site	
Figure 3 Phasing and ground plan of former Ford F	oundry buildings
Figure 4 Plate locations	•
Figure 5 Plate locations, upper floors	
Figure 6 Other structures around the site	
Figure 7 1901 plans	
Figure 8 Extracts from July 1923 plans	
Figure 9 1935 plans and extract showing layout of b	building 5
Figure 10 1952 plans	
Figure 11 1955 plans	
Plates	
Plate 1: Building 5 from the north east	Plate 10: Building 6 window showing cill string
Plate 2: Building 5 from the north west	course
Plate 3: Building 5 entrance from the west	Plate 11: Building 6 showing lintel string course
Plate 4: Example internal appearance of building 5	Plate 12: Building 6 triplet window with
Plate 5: Dorman long joist in building 5	chamfered mullions
Plate 6: Skylight in building 5	Plate 13: Building 6 cornice and parapet
Plate 7: Skylight openers in building 5	Plate 14: Building 6 extension from the west
Plate 8: Building 6 from the south west	Plate 15: Building 6 extension from the south west
Plate 9: Building 6 from the north west	

Plate 16: Building 6 bay window from the south west

Plate 17: Building 6 bay window, scalloped terracotta panel

Plate 18: Building 6 example internal appearance

Plate 19: Link between building 5 and building 6

Plate 20: Building 7 from the south west

Plate 21: Building 7 from the west

Plate 22: Walkways and stairways on exterior of building 7

Plate 23: Stanchions in interior of building 7

Plate 24: Trusses in interior of building 7

Plate 25: Interior of building 7 with historic art nouveau trusses

Plate 26: Bridge-way between building 7 and the maintenance building

Plate 27: Bucket line part of No 7 mould line

Plate 28: Maintenance building south gable from the south

Plate 29: Maintenance building windows

Plate 30: Maintenance building showing fabric of each floor

Plate 31: North gable of maintenance building

Plate 32: Stanchions and joists in interior of maintenance building

Appendix 1 HER information

Appendix 2 The archive

Appendix 3 Appraisal of the buildings by Jonathan Smith of Waterman, Energy, Environment and Design

Appendix 4 The Photographs (on CD)

Plate 33: Interior ground floor of maintenance building

Plate 34: Interior 3rd floor of maintenance building Plate 35: Bridge link between building 7 and

maintenance building

Plate 36: Buckets on No. 7 mould line within maintenance building

Plate 37: Travelling rail system for buckets within maintenance building

Plate 38: Travelling rail system between floors within maintenance building

Plate 39: Conveyor belt on second floor of

maintenance building

Plate 40: Radclyffe and Co. Imperial Stove Works in early 20th century

Plate 41: Exterior of building 7, wall of 1901 stove

Plate 42: Logo of Sidney Flavel and Co. on plans of 1923

Plate 43: Layout of building 6 shown on plans of 1935

Plate 44: Historic north wall of building 7

Plate 45: Historic trusses of building 7

Plate 46: Extension adjacent to bay window

Building recording at Former Ford Foundry, Leamington Spa, Warwickshire

Part 1 Project overview for Client

This section of the report is an overview of the building recording required to meet a planning condition relating to the redevelopment of former Ford Foundry at Old Warwick Road, Leamington Spa, Warwickshire.

The brief specified that the buildings should be recorded to English Heritage level 2 standard. This required photographing the exterior and interior of the buildings, sketching ground plans and annotating existing survey drawings. This produced an archive of the buildings before any changes were made to the building.

The brief also required an element of historical research and synthesis. Original records relating to Leamington Spa and the history of the site were studied at Warwickshire Record Office along with historic maps and trade directories. Online records were accessed along with digitised historic mapping, aerial photographs and other online sources.

Analysis of the buildings was based upon the recorded fabric and documentary research. The development of the buildings was reconstructed and illustrated on phased ground plans. These have been reproduced at the end of the report along with relevant photographs.

The buildings at the former Ford Foundry site are dated back to around 1860 when they were constructed by former employees of Sidney Flavel and Co. The foundry built on the site was for the manufacturer of kitcheners, a product patented by the Flavel company. The buildings on the site developed over the 150 years of founding taking place on the site with major development and expansion taking place in the early to mid 20th century. This development appears to have tied in with the advancement of founding technology. Whilst the site expanded to cover a large area between Prince's Drive and Old Warwick Road, the original 1860 structure remained albeit with internal alterations.



Building recording at Former Ford Foundry, Leamington Spa, Warwickshire

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Part 2 Building recording report

1. Planning background

This building recording project was commission by Waterman Energy, Environment & Design Ltd. The project consisted of the recording of the majority of buildings at the former Ford Foundry, Old Warwick Road and Prince's Drive, Leamington Spa, Warwickshire (Fig 1, NGR SP 3103 6518). It is planned to demolish all of the buildings and develop the site for retail use. A planning application has been submitted to, and approved by Warwick District Council (W10/1310). This will affect a heritage asset with architectural interest.

The project conforms to the Standard and guidance for the archaeological investigation and recording of standing buildings or structures (IfA 2008).

The project also conforms to a brief prepared by Warwickshire Museum Field Services (bibliographic ref WMFS 2011) and for which a project proposal (including detailed specification) was produced (HEAS 2011).

2. Aims

The aims of this project are:

- to describe and assess the significance of the heritage asset with archaeological interest;
- to establish the nature, importance and extent of the archaeological site;
- to assess the impact of the application on the archaeological site.

More specifically the following aims have been identified:

• to establish and record the character, history, dating, form and development of these buildings and their historic context/relationships with the rest of the complex of buildings

3. **Methods**

3.1 **Documentary research**

Prior to fieldwork commencing a search was made of records held in the Warwickshire Record Office and Warwickshire Historic Environment Record (HER). In addition to the sources listed in the bibliography the following were also consulted:

Cartographic sources

• Ordnance Survey maps of 1834, 1889, 1905, 1925, 1936 and 1951

Documentary sources

Warwickshire Records Office CR 2487/Z2876 – plans of 1901

CR2487/Z2084 – plans of 1922 CR2487/Z2865 – plans of 1923 CR2487/Z2889-2891 – plans of 1923-4 CR2487/Box 34/66 – plans of 1931 CR2487/Box 36/326 – plans of 1933 CR2487/Box 39/690 – plans of 1935 CR2487/Box 120/3858 – plans of 1952 CR2487/Box 123/4371 – plans of 1953 CR2487/Box 126/5511 – plans of 1955

- County histories (VCH 1951).
- Town histories (Hopper 1842)

• Domesday (National Archives E 31/2/2 Folio 239r 12,1).

3.2 **Building recording**

A detailed specification was prepared by the Service (HEAS 2011).

3.2.1 Fieldwork

Fieldwork was undertaken between 2nd November and 10th November 2011.

Building recording consisted of a photographic survey of the interior and exterior of the buildings, analysis of their development and annotation of existing survey drawings. All photographs were taken with photographic scales visible in each shot. The photographic survey was carried out with a Sony $\alpha 350$ digital SLR camera. All photographs were recorded on a pro-forma Photographic Record Sheet. Annotation of existing ground plans and elevations along with notes about the structures complemented the photographic record.

The project conformed to the specification for a level 2 survey as defined in the English Heritage document *Understanding historic buildings: a guide to good recording practice* (EH 2006). This level of survey is described as 'a descriptive record' (EH 2006). This required the following elements of survey:

Survey and drawings

• Sketched plans of the buildings

Photography

- General view of the buildings
- External appearance of the buildings
- Overall appearance of rooms and circulation areas.
- Any detail, structural or decorative, relevant to the building's design, development and use, which does not show on general photographs.
- Machinery or plant or evidence for its former existence
- Dates, signs, maker's plates and graffiti
- Building contents or ephemera which may have a bearing on the history of the buildings

3.2.2 **Building analysis**

Analysis of the building was based on the study of the photographic record, notes and annotated drawings. It was also informed by the documentary sources. The buildings as recorded are depicted in Plates 1 – 47. All the photographs taken during the recording and photo location plan have been included as Appendix 4. A location plan is shown as Figure 1 with Historic Environment Records on Figure 2. Analysis of the structures allowed basic phase plans to be drawn up. These have been produced as Figure 3 with plate locations shown on Figures 4 and 5. Further figures show historical plans of the buildings.

3.3 Statement of confidence in the methods and results

The building recording of the site produced an archive which has fulfilled the aims and requirements of a level 2 survey as specified in the brief (WMFS 2011). Almost all areas of the structures were accessed, with the exception of the areas below the north part of building 7. These areas were not accessed due to the areas being flooded and in complete darkness. Given that the buildings had formerly been a foundry and that all fixtures and machinery had been removed from the building it was not deemed safe to enter this area as dangers hidden below the water surface could not be discerned.

4. Context

The former Ford Foundry site is located to the west of the town of Leamington Spa (Fig 1). It is sandwiched between the railway line and the Grand Union canal on a plot of land at the junction of Old Warwick Road and Prince's Drive.

Learnington began as a small settlement on the River Learn. It is mentioned in the Domesday Book when it was called *Lamintone* and consisted of an area covering only 2 hides (NA E 31/2/2 Folio 239r 12,1). The settlement became *Learnington Priors* when ownership of the lands passed into the

hands of Kenilworth Priory in the 12th century (Hopper 1842, 9-10). The settlement grew very little between then and the 18th century. In 1663 the Hearth Tax returns name only 29 householders liable to the tax and 17 that were exempt (VCH 1951, 155-161).

The existence of the salt water springs at Learnington was known in the 16th and 17th centuries with Dugdale in 1656 describing the spring being used by the inhabitants to season meat (ibid). By the 1730s it was being used by the locals for making bread (Kelly 1896, 134) and by strangers as 'a purging water' with apparent success (VCH 1951, 155-161). The medical properties had come to the notice of the notice of authorities from around this time (ibid). Further springs were discovered by William Abbotts and Benjamin Satchwell who created the first bath in 1786 and a building was constructed over the 'old well' in 1803.

Leamington increased in size and popularity at a rapid rate in the 19th century as a result of the springs, a total of at least seven having been found. This has given Leamington the appearance of a 'fashionable watering place' (Kelly 1896, 134). Indeed it was believed to rival the efficacy of the waters at Cheltenham, Harrogate and Tunbridge Wells (White 1875, 715). Princess Victoria visited in 1830 and, as queen, in 1838 allowed the town to call itself Royal Leamington Spa (VCH 1951, 155-161).

The introduction of the canal and railway to Leamington, not only allowed the bathing houses to be untilised by large numbers but also introduced an infrastructure that allowed industry to flourish. The close proximity of Birmingham and the Black Country and the easy access to other markets made Leamington a perfect place to start or expand businesses. This can be seen in the number of entries for Leamington in the 19th century trade directories. Apart from the industries associated with the mineral waters, the largest companies at this time were kitchener, range and stove manufacturers. A kitchener is an elaborate cast iron kitchen stove that was the first alternative to cooking with an open fire. The main companies were Sidney Flavel and Co (Eagle Foundry) and Radclyffe and Co (Imperial Foundry). The industries around Leamington Spa were still developing and expanding in the 20th century. Many of these industries have now disappeared leaving large areas of the outskirts of the town as potential sites for redevelopment, in particular the Imperial Foundry which was taken over by the Ford Motor Company in the mid-20th century and closed in 2007

The Historic Environment Record has a number of entries for the area around and on the site of the former Ford Foundry (Fig 2 and Appendix 1). All of the records are for sites that date to the late 18th century and onwards. This shows that Leamington was expanding at this time and that it became a more industrial area. However given the paucity of event records, it is not possible to show the area has not been previously occupied, for example in Saxon and earlier times, as evidence of this occupation or settlement would not likely be visible above ground.

The east part of the foundry is covered by record number HWA9687. This is described as a modern industrial area marked on the Ordnance Survey First Edition map as railways sidings. The west part of the site is covered by HWA9688. This is described as 'Ford car parts factory, as of 2007 closed... marked on the Ordnance Survey First Edition (1889) as a foundry and cattle pens'. Also shown on the site of the foundry is MWA7162, described as 'the site of an iron works which was in operation during the Imperial period', and MWA7163 described as 'site of a pound for penning livestock during the Imperial period'. Both of these records originate from structures shown on the 1889 Ordnance Survey First Edition map. As does the record to the immediate west of the site, MWA9692 which is recorded as a 'small retail park first marked on modern maps, marked on the Ordnance Survey First Edition as small rectilinear fields associated with small isolated houses'.

To the south of the former Ford Foundry is a large area now covered with 20th century housing recorded on the HER as HWA9737, post 1900 and pre 1955 semi-detached housing. This area is also marked on the HER as both MWA12945 and EWA9834. MWA12945 is the record for Shrubland Hall, a 'villa with paddocks, pleasure grounds, walk and kitchen gardens' which was demolished in 1939. EWA9834 is the only event recorded in the area of the site and is a site visit to the remaining gardens of Shrubland Hall in 1996-97. Between the housing and the foundry is the Grand Union Canal. This is recorded on the HER as MWA4300 and HWA9134 – part of the Grand Union Canal, this part was originally the Warwick - Napton Canal.

To the north of the foundry are a number of records associated with the railways. HWA7796 is the record of the Leamington to Coventry railway line, 'marked on the Ordnance Survey First Edition onwards'. HWA9127 is recorded as a 'section of railway from Warwick to Leamington, marked on the Ordnance Survey First Edition onwards'. MWA7062 is the record for an engine shed 'built and used during the Imperial period and marked on the Ordnance Survey First Edition map of 1886'.

The building is now demolished. The record HWA9691 refers to an area of 'derelict industrial land, marked on the Ordnance Survey First Edition as railway sidings'. One final record is found to the north east of the foundry site, HWS 9689. This is the record of a modern waste dump and recycling centre.

5. The buildings

5.1 **Building descriptions**

The buildings recorded were located to the western side of the plot of land used for the former Ford Foundry site. Recording concentrated on buildings 5, 6, 7 and the maintenance building, although structures 8, 9, 10, 15, 16 and 20 (Fig 6) were also photographed from the exterior only. Locations of these buildings are shown on Figure 3.

5.1.1 Building 5

Building 5 (Plate 1) was constructed of brick and concrete. It was an irregular shape, wrapped around the north and east sides of building 6. The building was single storey and sat on a concrete foundation course with red brick walls above this. There was a string course of blue brick (Plate 2) and above this were the rectangular windows with rusticated brick cills (Plates 1 and 2). A concrete lintel course ran around the whole structure (Plates 1 and 2). The frontage of the building faced Prince's Drive (formerly River Walk Lane) and had a large entrance with steps up and curved wing walls (Plate 3).

Internally (Plate 4) the building had steel stanchions and joists manufactured by Dorman Long and Co Ltd, Middlesbrough (Plate 5). There were a number of skylights (Plate 6) but these had mostly been covered by suspended ceilings. Some of the skylights still had evidence of their original opening bars (Plate 7). The internal arrangement of the building had been altered a number of times with the final usage being offices, canteen and storage.

5.1.2 Building 6

Building 6 (Plate 8) was a small rectangular structure aligned north to south on the Prince's Drive frontage of the site. The building was constructed of red brick with blue brick foundations (Plate 9). It had a moulded brick string course immediately below the white-painted limestone cills (Plate 10) and another in-line with the limestone lintels (Plate 11). The windows were arranged in pairs and triplets with chamfered brick between them and herringbone brickwork between the segmental relieving arch and limestone lintels (Plate 12). Along the roof line was a moulded cornice topped with a red brick parapet with a blue brick string course and capped with moulded limestone coping stones (Plate 13). The roof was covered with purple slate and was hipped. The building had been extended to the south (Plate 14) with the style of the original structure being continued in the extension (Plate 15). The east elevation of the building had a bay window (Plate 16) with the same cornice and string course detail along with decorative scalloped terracotta panels above each of the windows (Plate 17).

Internally (Plate 18) the building had open office spaces which have been opened out from the smaller rooms that the building had originally. The building's only entrance is now through a link with building 5 (Plate 19) to the immediate north.

5.1.3 Building 7

Building 7 (Plate 20) was a polygonal shaped structure formed of numerous alterations and extensions. The majority of the building was around three storeys high (Plate 21) but with some lower sections. A large number of external fixtures of stairways (Plate 22), walkways, ducting and pipes masked much of the elevations of the building.

Internally large sections of the building had stanchions and reinforced steel joists (Plate 23) some manufactured by Dorman Long and Co Ltd, Middlesbrough. The roof trusses for these parts of the building were simple steel trusses (Plate 24). The lower portions of the building had more elaborate trusses and joists (Plate 25) but were also manufactured from steel.

The front part of building 7 (Plate 26) had a bridge attached leading into the maintenance building to allow access for suspended buckets on a travelling rail system (Plate 27) and was part of the No 7 mould line. A number of these buckets still existed in the building.

5.1.4 The maintenance building

The maintenance building (Plate 28) on the Ford Foundry site was a rectangular building constructed of brick, concrete and corrugated metal sheet. The ground floor was the brick part and had elongated windows with raking cills and metal glazing bars and frames (Plate 29). The three upper floors were constructed with corrugated metal sheets (Plate 30) and with large vents within the walls. The first floor had vents along the entire length of the building on the west and east elevations. The north gable was completely of brick construction (Plate 28) but the south gable was of the same construction as the east and west elevations with an external framework for the travelling rail system (Plate 31). A large amount of external piping and ducting, along with steel walkways, masked parts of the external elevations.

Internally the building had large stanchions (Plate 32) and reinforced steel joists manufactured by Dorman Long and Co Ltd, Middlesbrough. The building appears to have been designed with identical east and west walls on each floor despite the structure being divided into separate rooms. The ground floor (Plate 33) surface was concrete as was the ceiling. This floor was divided into a number of smaller rooms and offices, whilst the upper floors were each one large space. The flooring of the upper floors (Plate 34) was formed of metal mesh. These floors also had stanchions and reinforced steel joists to hold the upper levels and roof.

The second floor of the building had a bridge attached (Plate 35) leading into the main foundry building to allow access for suspended buckets (Plate 36) on a travelling rail system (Plate 37) and was part of the No 7 mould line. A number of these buckets still existed in the building. The travelling rail system was still in existence on every floor of the building and was a continuous route into and out of the building via each floor (Plate 38). The second floor also contained a conveyor belt running between the maintenance building and building 7 (Plate 39).

5.2 **Historical information**

In 1777 John Flavel (1754-1834) established a small iron-foundry at Bilton, Warwickshire. John's brother established himself as a general hardware merchant and general ironmonger in Coventry. By 1803 the brothers had given up their enterprises in Bilton and Coventry, and moved to Leamington Spa, trading from Church Lane. Around 1810 John's son, William, opened a new works on the corner of Dormer Place. Flavel's manufactured a variety of goods at this time, from ornate fireplaces to chimney top windbreakers. Trade directories of the 1820s record William Flavel as an ironmonger on Bath Street. In 1829 William Flavel invented the kitchen range and began production. The 1835 trade directory records William Flavel as an ironmonger 'and inventor and manufacturer of the patent kitchener' (Pigot 1835, 604) still trading from Bath Street. William's son, Sidney, took control of the firm after his father's death in 1844. The 1850 trade directory described him as a stove grate manufacturer and 'patentee and sole manufacturer of Flavell's (sic) patent kitchener' (White 1850, 637). Flavel's Kitcheners were exhibited at the first International Exhibition in 1851and won awards. Sidney Flavel remained in control until his own death in 1892. By this time company was known as 'Sidney Flavel and Co. 'inventors and sole manufacturers of Flavel's kitchener' (Kelly 1896, 158).

In the 1850s three knowledgeable and important employees left Flavel's and set up a rival company named Radclyffe, Harrison and Blunt. They built a new foundry off River Walk Lane (now Prince's Drive). They first appear in the trade directory of 1860 as Thomas Radelyffe 'manufacturer of the Learnington prize kitchener and ironfounder' (Kelly 1860, 999) and were manufacturing at Old Town Foundry. By the time of the 1868 trade directory the company was called Radclyffe and Co and were described as 'manufacturer of the patent prize kitcheners and general iron founders' (Kelly 1868, 1078). The Ordnance Survey first edition map shows the foundry on River Walk Lane and names it as 'Old Town Foundry (Iron)'. The 1896 trade directory still shows the company as Radclyffe and Co. 'iron founders and range manufacturers' on Old Warwick Road (Kelly 1896, 158). This company was to become the Imperial Stove Company but was taken over by Flavel's in the early 1900s after both companies had appeared in the 1900 trade directory (Kelly 1900, 159 and 165). The 1905 Ordnance Survey map shows the foundry again, still concentrated on buildings off River Walk Lane, although now extended, but names it as Imperial Stove Works. By the 1912 trade directory the companies had joined and were described as 'Flavel Range and Imperial Gas Stoves Limited, stove and range manufacturers, Eagle Foundry' (Kelly 1912, 173). The same directory also had an entry for the 'Imperial Stove Co. (now Flavel Range and Imperial Gas Stoves Limited), iron founders, range manufacturers and gas engineers, Old Warwick Road' (ibid, 175). The new company seems to have split business between the two sites with range manufacturing taking place at the Flavel's site of Eagle Foundry and gas stove manufacture taking place at the Imperial Stove

Works site (Bennett 1914, 48 and 53). The 1925 Ordnance Survey map still names the buildings, now greatly extended, as Imperial Stove Works which suggests that this was the name of the foundry and not a company name. The Flavel family continued to run the whole company until the death of Percival Flavel in 1939. Flavel's sold the Imperial Stove Works, at Old Warwick Road, to the Ford Motor Company. Ford continued on the site until 2007 when the plant was closed.

The Warwickshire Record Office (WRO) holds a large number of documents relating to the site. The first of these dated from 1901 and the last from 1970. In 1901 the Imperial Stove Company, prior to being taken over by Flavel's, proposed additions of a curved roof stores building and a stove room (WRO CR2487/Z2876) to their buildings at Old Town Foundry, Old Warwick Road (Fig 7). A photograph of the early 20th century shows these extensions (Plate 40) although the large stores building has since been demolished. The stove room still exists but has been greatly altered (Plate 41). Both of these extensions are shown on the 1905 Ordnance Survey map.

A number of proposed plans of the 1920s exist in the WRO archives. Most of these are small scale extensions to existing structures. The plans of 1922 (WRO CR2487/Z2084) show the construction of the engineering offices, the west part of building 5. The plans of June 1923 have been stamped with the Sidney Flavel and Co. logo (WRO CZ 2487/Z2889, Plate 42). The plans of July 1923 (WRO CR2487/Z2890) show the large extension to the south of the foundry, extending the buildings almost to Old Warwick Road. This building was designed to have an impressive frontage to Old Warwick Road (Fig 8), however there are no images to show whether this was ever constructed.

The plans of the 1930s again show small scale extensions to the foundry site. The plans of 1935 (WRO CR2487/Box 39/690) show the original layout of the 1860s building on River Walk Lane (Plate 43). It also shows that a covered way was to be constructed along the west side of the foundry (building 7; (Fig 9). The 1939 Ordnance Survey map shows that the covered way had been constructed along with a large range on the east of the main building (building 7).

The final relevant plans held in Warwickshire Record Office date from the 1950s. The 1952 plans (WRO CR2487/Box 120/3858) show that, despite belief to the contrary, Sidney Flavel and Co were still owners of the Imperial Stove Works at this time and were proposing to construct a brand new factory on the site (Fig 10). Presumably this would have involved a large amount of demolition of the existing buildings but the proposed structures were not built. The 1955 plans (WRO CR2487/Box 126/5511) are the first mention we have of the Ford Motor Company on the site where they are planning alterations and extension to the Imperial Foundry on Old Warwick Road. The plans show that the maintenance building and Old Warwick Road frontage were constructed at this time (Fig 11). A book by Jacqueline Cameron (Cameron 2010) contains a large number of photographs of the Imperial Foundry both from its incarnation as Ford Motor Company and from the time of the previous owner, Sidney Flavel and Co.

5.3 **Building development**

5.3.1 **Phase 1: c1860** (Fig 3)

In the 1860s a small brick building was constructed on River Walk Lane. This building, building 6, was part of a foundry and was probably built by Radclyffe, Harrison and Blunt, the former Flavel's employees who had left the company in the 1850s and started up the Imperial Stove Company. The architectural style of the building shows that it was constructed at this period. The trade directories do not include this new company until 1860 (Kelly 1860, 999) when they are shown under 'Thomas Radcliffe (sic), manufacturer of the Leamington prize kitchener, and iron founder, Old Town Foundry'. The 1889 Ordnance Survey First Edition map shows building 6, and parts of building 7 to the south, and names them Old Town Foundry.

The architectural style of building 6 shows that this was not a foundry building and therefore would have functioned as the offices and sales rooms of the Imperial Stove Works. The 1935 plans (WRO CR2487/Box 39/690; Plate 43) show the probable original layout of the building with the front door and steps in place prior to being blocked up.

5.3.2 **Phase 2: By 1889** (Fig 3)

The Ordnance Survey First Edition map of 1889 shows a section of building 7 on the site. It is possible that this was constructed at the same time as the office and sales rooms around 1860. However there is little structural evidence still surviving from this period to be sure of the date. The

north wall of the structure has been altered many times, with openings being inserted and blocked, that there is little original fabric still surviving (Plate 44).

Internally a small number of trusses and joists can be dated to this period and show the location of this phase of the Imperial Stove Works (Plate 45). The 1896 trade directory (Kelly 1896, 158) shows the company trading under the name Radclyffe and Company, 'iron founders and range manufacturers, Old Warwick Road'.

5.3.3 **Phase 3: 1900s** (Fig 3)

In the 1901 a small extension was added to the foundry building (building 7). This was a stove house with a chimney (Plates 40 and 41, Fig 6). Also constructed at this time, but later demolished was the first structure on the site of building 5. It is shown on the plans of 1901 (WRO CR2487/Z2876) and was designed to be constructed of corrugated galvanised sheets with curved, Belfast truss roofs and two skylights. The edge of it can be seen on a photograph of the early 20th century of the Imperial Stove Company (Plate 40) taken from the railway line.

These two structures are shown on the 1905 Ordnance Survey map along with a new range on the east of the foundry buildings (building 7). This construction of this edifice is not documented in the archives at Warwickshire Record Office. The only surviving evidence of this part of building 7 are the surviving trusses (Plate 25) which are elegantly decorated with curved braces synonymous with the architectural style of the time, Art Nouveau.

5.3.4 **Phase 4: 1920s** (Fig 3)

The 1920s saw a number of phases of construction on the foundry site. By, and during, 1922 extensions had been built to the south of the original foundry building, building 7. It is possible some of the original fabric still exists within building 7 to show these extensions. To the north of the original office building, building 6, a large range was constructed in 1922 and housed the engineering office of building 5. This effectively joined buildings 5 and 6. Constructed in 1923 (WRO CR2487/Z2890) was a large factory range to the south of building 7 along the River Walk Lane frontage. This effectively extended this site south to Old Warwick Road. The Old Warwick Road frontage of this extension would have been impressive (Fig 7). This suggests that at least part of this structure may have been used as a showroom designed to display the products of the company. A later demolished range of buildings also joined the 19th century parts of buildings 6 and 7 as can be seen on the 1925 Ordnance Survey map of the site. Although this map does not show all of the extensions discussed above.

5.3.5 **Phase 5: 1930s** (Fig 3)

The 1930s development of the site was concentrated on building 7, with extensions being added to the east and west. The proposed drawings of the 1930s and the 1939 Ordnance Survey map show a long range was constructed on the west of the building along the edge of Prince's Drive (formerly River Walk Lane). This was to be a covered entrance way. The building was also further extended to the east, increasing the size of the structure by as much as a third. It seems that the development of foundry technology was allowing the expansion of the site, along with the need to diversify into the manufacture of items for the war effort. At this time the site was still owned by Sidney Flavel and Co. who were well known for making ammunition boxes and other items during the Second World War, as can be seen by the photographs on the Windows on Warwickshire web page.

5.3.6 **Phase 6: 1950s** (Fig 3)

No plans exist from the 1940s but plans from the 1950s show the construction of further extensions to the east and south on the foundry site. The 1951 Ordnance Survey shows that to the east of the 1922 portion of building 5, a large structure was built. This was built on the site of the 1901 stores and probably caused the demolition of this building as it appears to have survived on the mapping until this time. It appears that during the construction of this part of building 5 the north and east walls of the entire structure were completely rebuilt as there are no building breaks along these elevations. It seems probable that the large entrance way with curved corners (Plate 3) was therefore added at this time. The style of this doorway shows that this was carried out in the 1940s. This new structure was to be used as a canteen, the last incarnation of which had burgundy tiles on the walls behind the serving area, a portion of which still survived in the building (Plate 4).

Building 6 was extended south towards building 7 by 1951 with the architectural style of the original 1860s building being copied for this new part of the structure (Plate 14). A new entrance

way into building 5 was also constructed at this time. This joined buildings 5 and 6 (Plate 19) and caused a small extension to built beside the bay window of the building (Plate 46).

The 1951 Ordnance Survey map also indicates that the building was manufacturing agricultural implements by this time. The WRO plans of 1955 show that the Ford Motor Company were in ownership of the site by this time and photographs show that the foundry was making ploughs to be fixed to Ford tractors (Cameron 2010, numerous pages). This change in function would have required slightly different technology and the construction of the maintenance building, called the 'cooling tower' at that time, took place in 1955 (Fig 10, WRO CR2487/Box 126/5511). Proposed plans of the building show that it was constructed on the site of a pre-existing building that had to be demolished prior to its construction. The proposed drawings show that the building was to be used as a cooling tower on the three upper floors with a fire station and janitor's office on the ground floor with a stair tower in the south east corner. The floors were designed to be 12 feet high on the ground floor, followed by a height of 10 feet for the first floor and 8 and a half feet for the second and third floors.

When the maintenance building was constructed, it was built at the same time as a number of alterations to the foundry site, including the bridge to the main foundry building. This bridge formed an entrance way into the site and included a projecting segmental concrete canopy. This can be seen in a photograph of 1956 (Plate 47) during a visit of dignitaries to the site.

5.3.7 **Phase 7: By 2010** (Fig 3)

Between 1955 and 2010 the functions that the Ford Motor Company carried out on the Imperial Foundry site changed along with the technologies used to carry out those functions. Large concrete structures were added into the building along with large semi-permanent edifices constructed to the south of the main building in the late 20th century. Photographs of the interior of the building in the mid to late 20th century show the changes of the forging system from a very hands-on method to one being electrically controlled (Cameron 2010, page 6).

6. **Discussion**

6.1.1 **Buildings 5 and 6**

Building 6 was the oldest structure on the site and the one which was built with some architectural style and concern for appearance. This is probably because it was used as office space and the entrance for the Imperial Stove Works. It may also have been used as a showroom for the goods the foundry produced. The 1901 planning documents show that the site of building 5 had already been built in at this time, although this 1901 building was demolished by 1955.

Later planning documents show extensions to building 5 and additions to the east of building 6. The plans seem to suggest that the new extensions were just adding to the 1901 structure however the architectural style of the frontage part of building 5 is carried through the whole structure of the building and there appears to be no building breaks to show that the building was constructed at different times. The architectural style of the building appears to be late 1930s or 1940s. There are no planning drawings relating to this period but this stage of building therefore probably involved the removal of the galvanised steel walls and Belfast truss roof of the 1901 structure and replaced them with the same style of walls as that of the new structure on the frontage.

The internal layout of both buildings 5 and 6 has been considerably altered in the later part of the 20th century. A planning drawing from 1935 (WRO CR2487/Box 39/690) shows the internal layout of building 6 divided into a number of rooms opening off an entrance from River Walk Lane (later Prince's Drive). A large amount of vandalism to the structures has destroyed much of the fixtures and allowed water access into the buildings to further increase the destruction.

Building 7

Building 7 was used as the foundry of the Imperial Stove Works and then the Ford Motor Company. As such the most up-to-date technologies would have been used within the building allowing a profitable business to trade from the site. Evidence of the original layout of the building has been lost due to these alterations throughout the 20th century and very early 21st century. The spaces within the building were mainly open to the roof and it is through the style of the roof trusses that the earlier portions of the building are still discernible.

The development of the structure and its continued adaptation to the requirements of the changing technology used in foundries removed the earlier evidence of the placing of the foundry functions.

6.1.3 **Maintenance building**

Evidence of the original layout of the maintenance building has been lost through alterations through out the later 20th century and probably very early 21st century. The ground floor however appears to have been divided into a number of individual rooms with a large central space.

The upper floors of the building were described as a cooling tower on the 1955 proposed drawings. However by the time the building was last used as part of the No 7 mould line it contained rails to allow buckets to move between the main foundry building and along the rails on each of the floors. The side elevations of the building with large vents suggest that this process was still part of a system of cooling.

6.2 **Research frameworks**

The archaeological recording of industrial buildings is a technique of recording that has been carried out for many years. These structures are a dwindling link to the past technologies that contributed to the economic growth of the West Midlands. The recording of these structures tends to concentrate on the buildings of the 18th and 19th centuries although 20th century buildings are beginning to be addressed (Stratton and Trinder 2000).

The archaeology of the West Midlands: a framework for research (Watt 2011), the publication of the West Midlands Regional Research Framework for Archaeology, is decidedly lacking in the discussion of upstanding archaeology and the recording of historic buildings. The section regarding post-medieval archaeology recognises that the archaeology of buildings is a 'well-established component' of the discipline of archaeology. However, it also regards that the recording of above ground archaeology is worthless without the excavation of the surrounding remains (Belford 2011, 226). This is a very blinkered view of buildings archaeology and disregards the information that can be gained from investigating and analysing an upstanding structure. Mike Hodder discusses the need to record more historic buildings and to integrate above and below ground archaeology (Hodder 2011, 251). He states that the study of buildings 'not just the exceptional but also the typical, would be useful'.

7. Significance

The buildings recorded have already been subject to an appraisal prepared by Jonathan Smith of Waterman Energy, Environment and Design (see Appendix 3). This consisted of a statement of significance for the standing buildings on the site. The conclusion of this statement stated that 'Throughout the site the standing fabric has been highly degraded through its use as a manufacturing site (change and remodelling to meet market needs and to keep step with technological innovation) and, since 2007, with the illegal trespass and forcible removal of metalwork' (see Appendix 3). The buildings have been dealt with individually below.

The significance of building 5 is low. Architecturally its external appearance has more importance than much of the rest of the Ford Foundry site. However the building was only constructed in the 1950s and contains none of the earlier structures on the same site. The internal arrangement of the 1950s structure has also been completely lost due to the number of alterations and extensions built in this area. It is likely that actually only the external fabric is original.

Building 6 is of moderate significance due to its historical and architectural interest. The building was constructed in the mid Victorian period, probably around 1860, and the architectural style of this period is reflected in the fabric of the building. The style has been only slightly compromised by the removal of the entrance door, replaced with a window in similar style to the others. The internal layout though has been completely lost and opened out into a number of large rooms. The structure itself has also been compromised by vandals removing sections of the roof tiles and smashing the glass of the skylights allowing water to collect in the building.

The architectural significance of these two buildings has been greatly diminished by the later alterations and the current state of the structures. Further recording of the structures will reveal little that has not already been recorded and the layout and development of the buildings will be identified during analysis of the research and results of the building recording.

The significance of the majority of building 7 is low. It is of interest due to its historic nature and association with Radclyffe, Flavel and Ford however, all its fixtures and fittings, including those used last by Ford, have been removed and only the superstructure survives. This superstructure is indistinguishable from the majority of other buildings of this type particularly those that have developed in such an ad hoc way as this building has. The building has also been considerably altered and extended over its 100 year existence. Its external appearance is distinguished by the fact that it is hidden by the large numbers of walkways, pipes ducts and stairways.

The Victorian and early 20th century parts of the structure are of moderate significance due to the historical interest of the building and with some architectural interest in the art nouveau elements of the roof trusses. However the relevance of these parts of the building has been lost due to the alterations that have occurred to the building around them. Further recording of these trusses would reveal little evidence of the form and layout of the structure prior to the 20th century developments of the building.

The significance of the maintenance building is low due to the loss of all fixtures and fittings and the number of alterations to the structure. The external appearance has no distinguishing features that would set it apart from other buildings of this type. In fact it is very utilitarian in style. The building was only constructed in the late 1950s and therefore, historically and architecturally it has little to set it apart from other buildings of its type or age. The most significant part of the structure is the remains of the mould line on the second floor, but this has been recorded as part of this project and is a movable fixture that could be taken out of the structure for use or display elsewhere. It is not even clear whether the mould line and rails where part of the structure when it was first designed and constructed.

When the Ford Foundry was closed in 2007, all machinery was left within the building. Recording of the structure at that point would have allowed a much greater understanding of the processes and significance of the buildings to be gained.

8. **Publication summary**

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, and unless directed otherwise, the Service intends to publish the following summary in an appropriate journal or journals.

Building recording was undertaken on behalf of Waterman Energy, Environment & Design Ltd at the Former Ford Foundry, Old Warwick Road and Prince's Drive, Leamington Spa, Warwickshire (NGR SP 3103 6518). The buildings on the site consisted of foundry structures dating from around 1860. The structures had been founded by Radclyffe and Co, later the Imperial Stove Works, to manufacture Leamington kitcheners. The founders were formerly employees at Sidney Flavel and Co who were the patent holders for the kitchener. The buildings on the site were greatly extended and altered over the 150 years of founding on the site. The final usage of the site was by the Ford Motor Company who bought it from Flavel's in the 1950s and began by manufacturing agricultural implements to be attached to Ford tractors and ended by manufacturing parts for Ford cars. The plant was closed in 2007.

9. Acknowledgements

We would like to thank Jonathan Smith and Richard Stockwell of Waterman Energy, Environment & Design Ltd, Clive Nichols and Duncan Scott of Vertase F.L.I and Anna Scott, the Curator for their kind assistance in the successful conclusion of this project.

10. **Personnel**

The project leader was Shona Robson-Glyde. The project manager responsible for the quality of the project was Hal Dalwood. Fieldwork was undertaken by Shona Robson-Glyde and Tim Cornah with illustration by Shona Robson-Glyde.

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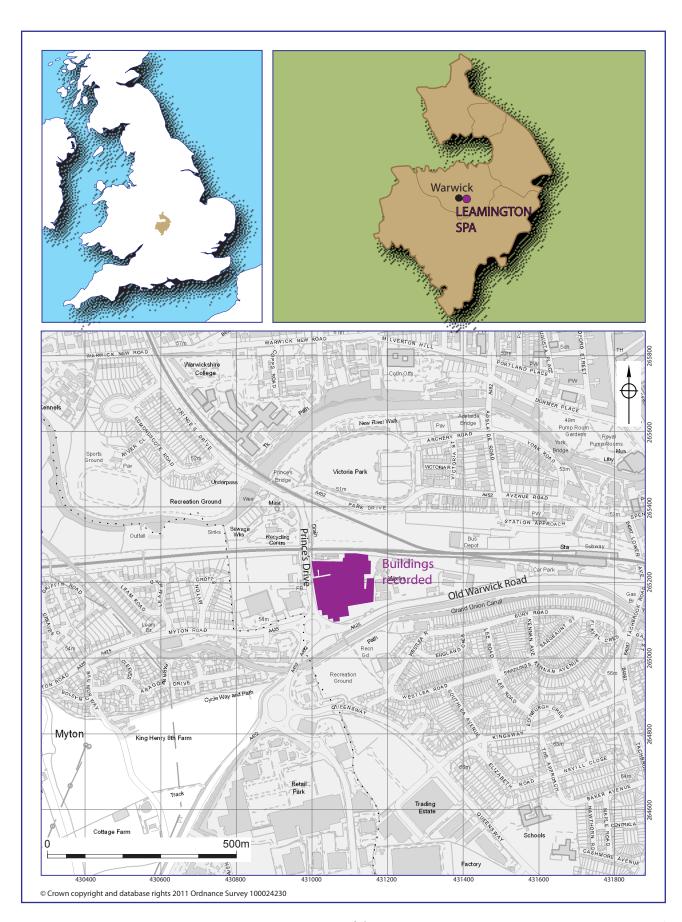
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Figures





Location of the site

Figure 1

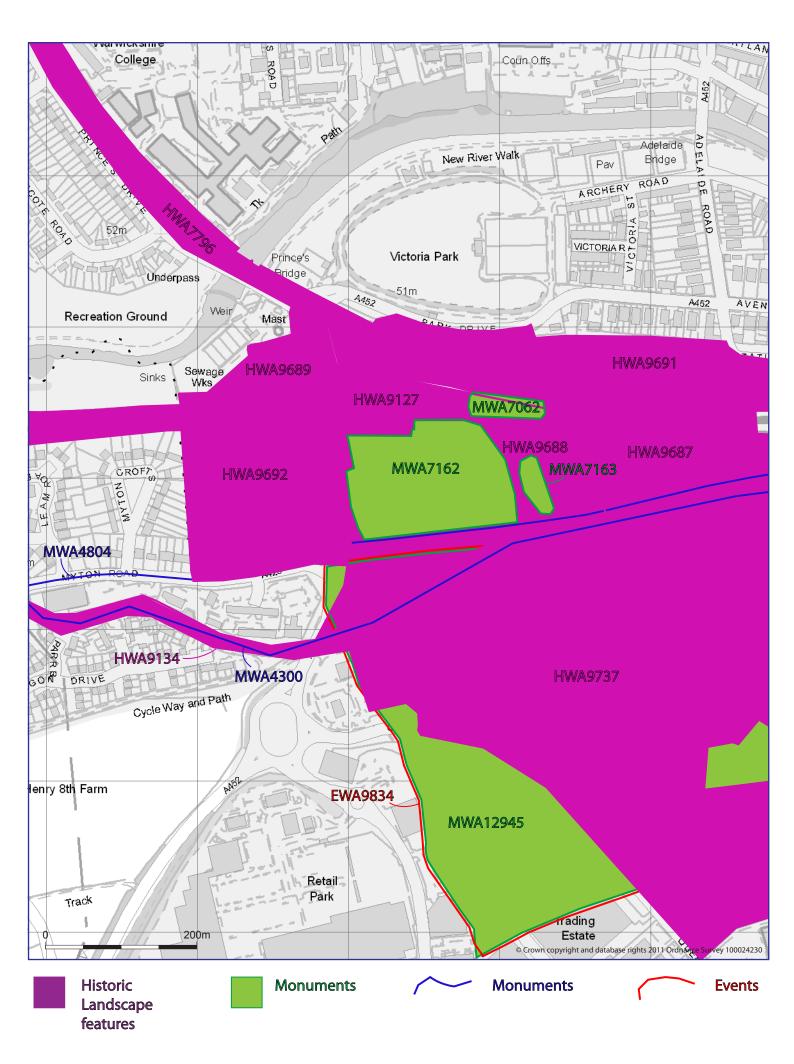
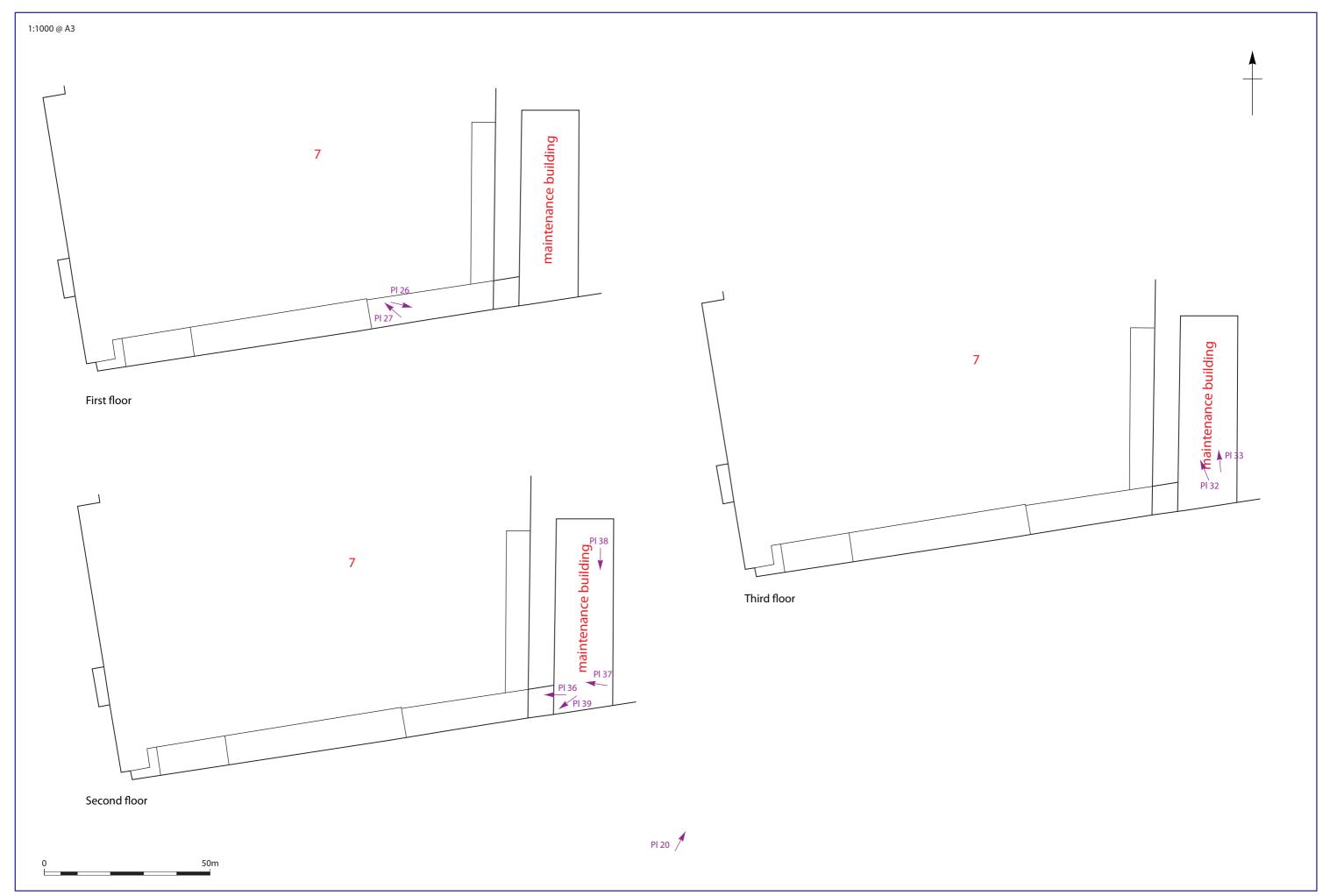






Plate locations Figure 4





Building 8 from the south east



Building 9 from the south east



Building 10 from the south west



Building 15 from the south west

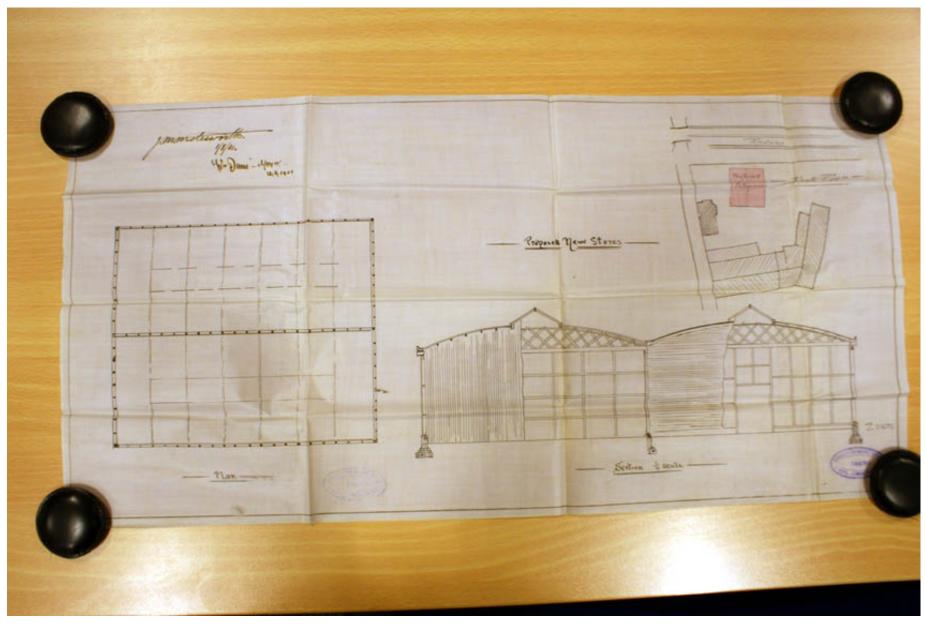


Building 16 from the south east



Building 20 from the north west





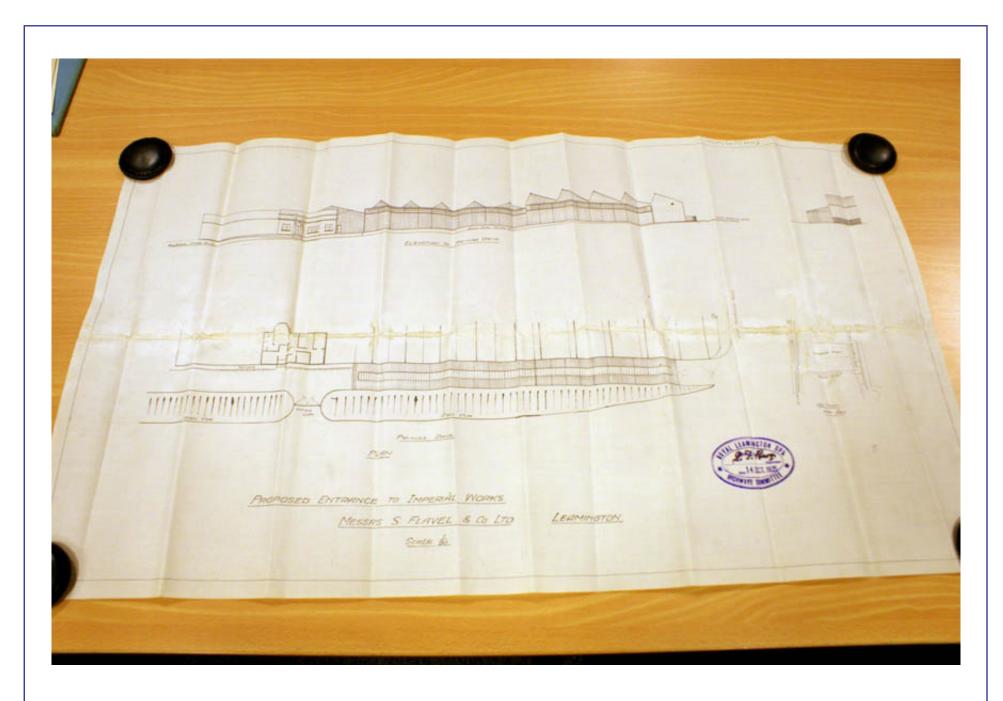
1901 plans (WRO CR2487/Z2876)

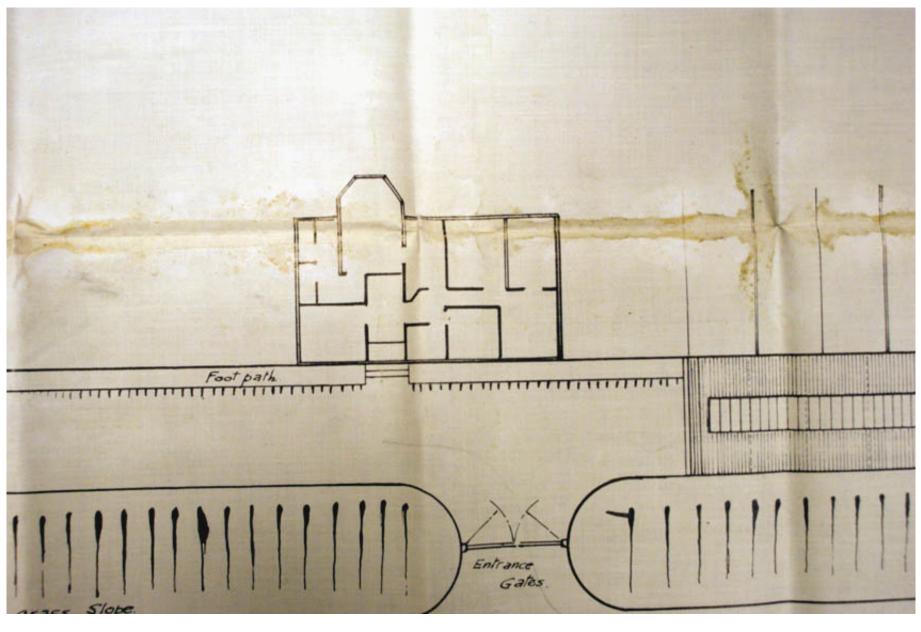
Figure 7





Extracts from July 1923 plans (WRO CR2487/Z2890)

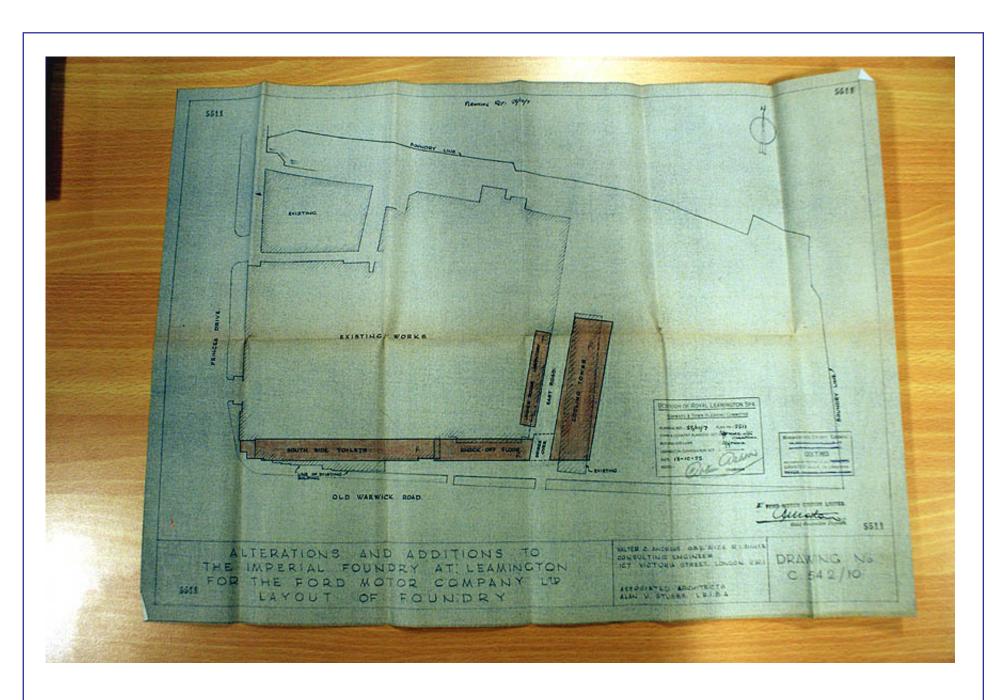


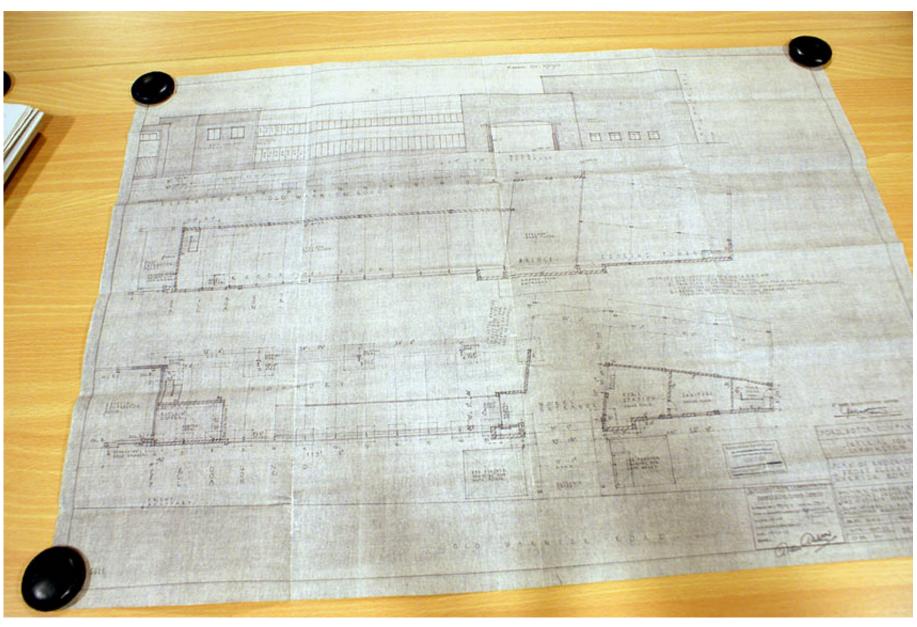


1935 plans and extract showing layout of building 5 (WRO CR2487/Box 39/690)



1952 plans (WRO CR2487/Box 120/3858)





1955 plans (WRO CR2487/Box 126/5511)

Plates





Plate 1: Building 5 from the north east



Plate 2: Building 5 from the north west



Plate 3: Building 5 entrance from the west



Plate 4: Example internal appearance of building 5



Plate 5: Dorman long joist in building 5



Plate 6: Skylight in building 5



Plate 7: Skylight openers in building 5



Plate 8: Building 6 from the south west



Plate 9: Building 6 from the north west



Plate 10: Building 6 window showing cill string course



Plate 11: Building 6 showing lintel string course



Plate 12: Building 6 triplet window with chamfered mullions and herring bone brickwork with relieving arch



Plate 13: Building 6 cornice and parapet



Plate 14: Building 6 extension from the west



Plate 15: Building 6 extension from the south west



Plate 16: Building 6 bay window from the south east



Plate 17: Building 6 bay window, scalloped terracotta panel



Plate 18: Building 6, example internal appearance.



Plate 19: Link between building 5 (left) and building 6 (right)



Plate 20: Building 7 from the south west



Plate 21 Building 7 from the west



 ${\it Plate~22: Walkways~and~stairways~on~exterior~of~building~7}$

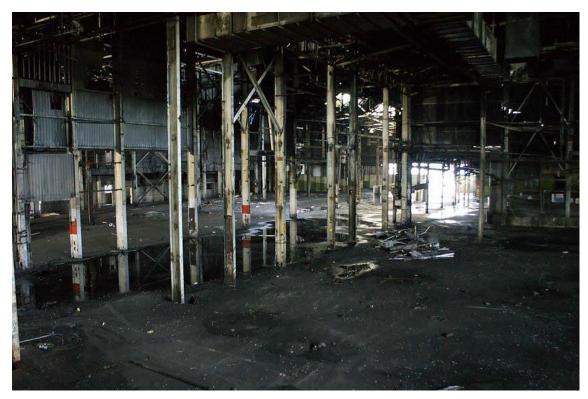


Plate 23: Stanchions in interior of building 7



Plate 24: Trusses in interior of building 7

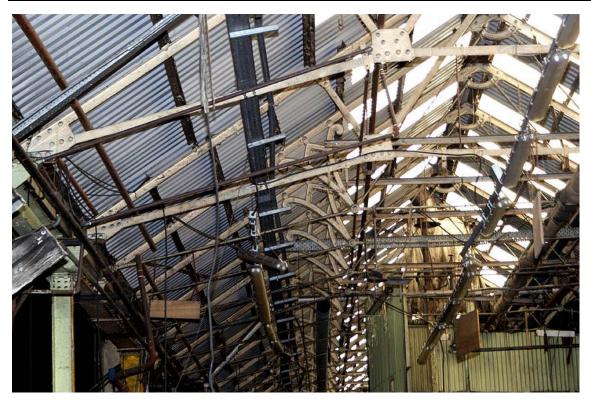


Plate 25: Interior of building 7 with historic art nouveau trusses



Plate 26: Bridge-way between building 7 and the maintenance building



Plate 27: Bucket line, part of No. 7 mould line, going into main area of building 7



Plate 28: Maintenance building, south gable, from the south



Plate 29: Maintenance building, windows on the west wall, from the north west



Plate 30: Maintenance building showing the exterior fabric of each floor



Plate 31: North gable of the maintenance building



Plate 32: Stanchions and joists in interior of maintenance building



Plate 33: Interior ground floor of maintenance building



Plate 34: Interior 3rd floor of maintenance building



Plate 35: Bridge link between building 7 (left) and maintenance building (right)



Plate 36: Buckets on No. 7 mould line within maintenance building



Plate 37: Travelling rail system for buckets within maintenance building



Plate 38: Travelling rail system between floors within maintenance building



Plate 39: Conveyor belt on second floor of maintenance building



Plate 40: Radclyffe and Co. Imperial Stove Works in early 20th century (from Windows on Warwickshire)



Plate 41: Exterior of building 7, wall of 1901 stove room

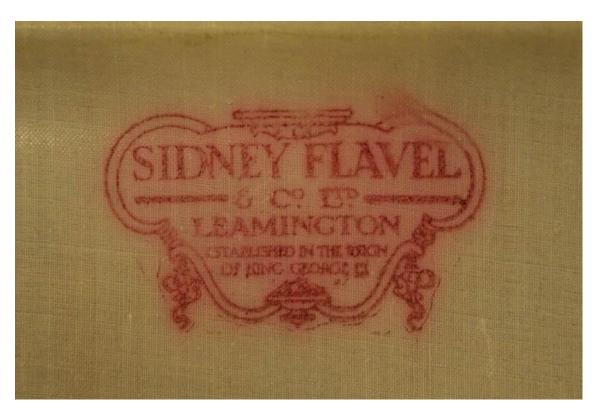


Plate 42: Logo of Sidney Flavel and Co. on plans of 1923 (WRO CR2487/Z2889)

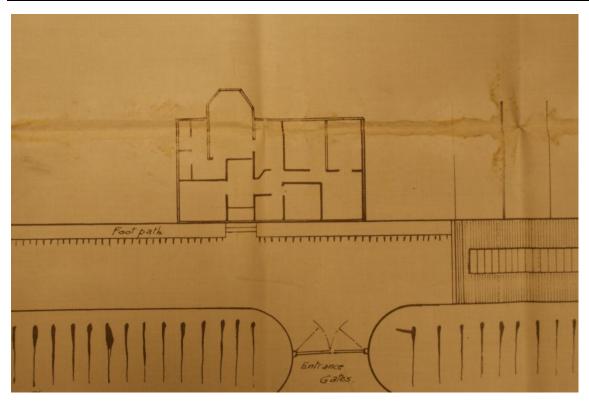


Plate 43: Layout of building 6 shown on plans of 1935 (CR2487/Box 36/690)



Plate 44: Historic north wall of building 7



Plate 45: Historic trusses of building 7



Plate 46: Extension adjacent to bay window



Plate 47: 1956 dignitary visit in front of the 1955 entrance and bridge between building 7 (left) and maintenance building (from Windows on Warwickshire)

Appendix 1 HER information

Entries in italics refer directly to the site

HER No	Name	NGR	Туре	Date	Description
EWA9834	Shrubland Hall Garden	SP 3141 6487	Event – field observation	-	Site visit to assess possible surviving trees
MWA12945	Shrubland Hall	SP 3141 6487	Monument – garden	Imperial	Villa with paddocks, pleasure grounds, walks, kitchen garden. House demolished 1939.
MWA4300	Grand Union Canal	SP 3693 6434	Monument – canal	Imperial	Grand Union Canal, originally the Warwick and Napton Canal, part of the link between Birmingham and London
MWA7062	Engine shed west of Leamington Station	SP 3120 6529	Monument – engine shed	Imperial	Site of an engine shed marked on 1886 map.
MWA7162	Site of iron foundry on Old Warwick Road	SP 3111 6519	Monument – foundry, iron works	Imperial	Site of iron foundry marked on 1886 map
MWA7163	Site of cattle pens on Old Warwick Road	SP 3124 6519	Monument – pound	Imperial	Site of a pound used for penning livestock marked on 1886 map
HWA7796	Leamington to Coventry railway line	SP 2936 7044	Historic landscape – railway	Imperial	Leamington to Coventry railway line marked on the OS 1886 map and onwards
HWA9127	Warwick to Leamington railway line	SP 3086 6527	Historic landscape – railway	Imperial	Section of railway marked on OS 1886 map and onwards
HWA9134	Grand Union Canal	SP 2633 6563	Historic landscape – canal	Imperial	Part of Grad Union Canal originally the Warwick to Napton Canal
HWA9687	Modern industrial area	SP 3147 6520	Historic landscape – other industrial	Modern	Modern industrial area, marked OS 1886 map as railway sidings
HWA9688	Ford car parts factory	SP 3117 6513	Historic landscape – motor industry	Modern	Ford car parts factory, as of 2007 closed. Marked on OS 1886 map as a foundry and cattle pens
HWA9689	Waste dump and recycling centre	SP 3088 6535	Historic landscape – waste tip	Modern	First marked on modern OS maps
HWA9691	Derelict land	SP 3136 6534	Historic landscape – derelict industrial land	Modern	Mostly derelict industrial land, marked on OS 1886 map as railway sidings
HWA9692	Retail park	SP 3092 6517	Historic landscape – commercial and retail	Modern	Small retail park first marked on modern OS maps. Shown as small rectilinear fields with small isolated houses on OS 1886 map
HWA9737	Part of Leamington Spa	SP 3151 6477	Historic landscape – post 1900s/pre 1955 semi- detached	Imperial - Modern	Post 1900 / pre 1955 semi-detached housing. Marked on OS 1886 map as rectilinear fields with straight and curvilinear boundaries.

Appendix 2 The archive

The archive consists of:

- 5 Fieldwork progress records AS2
- 22 Photographic records AS3
- 873 Digital photographs
- 2 Scale drawings
- 1 Computer disk

The project archive is intended to be placed at Warwickshire Museum

Appendix 3 Appraisal of the buildings by Jonathan Smith of Waterman, Energy, Environment and Design					



Energy, Environment & Design

Direct Tel: 0117 937 8200

Direct Email: j.g.smith@waterman-group.co.uk

Our Ref: EED10525 -103-C-004-JGS-HB Your Ref: Planning app: W10/1310

Date: 7th October 2011

Ms Anna Stocks County Planning Archaeologist Warwickshire Museum Field Services The Butts Warwick CV34 4SS

Dear Anna,

Re: Ford Foundry, Learnington - Built Environment Appraisal: Statement of Significance

Further to our telephone conversation yesterday, please find below an appraisal (statement of significance) of the standing buildings at the above site. I have attached a sketched phasing diagram marked up on the Plant Layout Plan.

Mid and later C20th buildings and structures:

Most of the post WWII structures are to be found in the eastern half of the site. Many of these were demolished soon after the plant ceased operating, including the 'suppliers' warehouse', the 'vehicle wash', the 'scrap handling facility' and many of the smaller structures and buildings immediately around the scrap handling facility. The 'grey iron charge make up' and the two buildings immediately to its south are late C20th structures largely formed in shuttered, reinforced concrete, though the fork-lift truck buildings also exhibits some stretcher bond brick work and aluminium framed windows. Further south, the 'pattern shop tool room' is likely to be mid C20th in that it was originally formed in Flemish garden bond brick work. It is largely an open-plan, single storey structure with a roof formed in aisles of light steel trusses. Vehicle maintenance facilities formed in block work have been added at a later phase along its eastern edge. The 'stores', further south, is a similar structure, but includes extraction plant at its rear that serves the 'maintenance block'. It is likely to be later in date than the pattern shop, in that its brick work is in stretcher bond.

There is a mid C20th extension to the south of the main mould lines and the maintenance block (opposite the main entrance off Old Warwick Road), with the 'shipping' and 'heat treatment' extensions in the south corner, against the roundabout, formed in a steel framed, pressed steel clad later C20th addition.

In the north corner, against the railway, are a range of late C20th single storey brick structures. These are largely in ruin. To their east, the 'grey iron melt', the 'nodular melt' and the 'nodular charge makeup' are formed in steel frames with shuttered, reinforced concrete. They include the taller structures on the site, including extraction plant, heat exchangers and hopper silos on their roofs and upper lifts. These are multi-phased, including some C21st plant and structures, but are no earlier that late C20th.

Elsewhere, the structures against the railway in the east of the site are later C20th, large reinforced concrete bins. The 'melt addition storage' is a single storey brick built structure in severely poor repair.

All of the above have been stripped of any metalwork fitting and cabling. In some cases structural steel has also been removed. It is this surveyor's view that none of these can be described as heritage assets and their condition is largely dilapidated, with the result that no further record of them is required



Structures and buildings 1925-1934

This period of the site's development represents the formation of the main foundry areas of the site that were to serve it until its close in 2007. The 'maintenance block' represents the better fabric survival from this period, formed in stretch-bond brickwork around a steel frame and is largely a discrete building from the rest of the plant. Internally it comprises four storeys, with the floors formed in steel mesh. The low ceiling (c 2.1m floor to ceiling) includes rails to carry ballast hoppers/buckets. These survive extensively in the maintenance block and examples have been recorded photographically [see photo No.1].

The 'mould lines' are huge, cathedral-like structures, formed in steel frames. Their age is quite hard to distinguish from their fabric alone (ie without the map regression analysis). They exhibit signs of continual alteration, extension and remodelling, it being hard to distinguish clear phases of development from periods of remodelling and repair etc. It is unlikely that its eastern elevation is original and it is hard to tell the sequence of development to the north. A number of highly degraded mass concrete furnaces and furnace plinths survive throughout the mould lines. Those to the north exhibit the better survival. The 'fettling shop', with its floor raised nearly a metre above the mould lines is largely of one phase. Its steel frame structure supports four aisles of roofs formed with light steel trusses. The valleys are periodically supported by slender steel pillars. The outer elevations (north, west and south) are formed in brickwork with ancillary rooms off to the south and west. The east end of the fettling shop is open to the mould lines.

Structures and buildings 1905-1925

This area, that largely envelopes the earliest structures on the site (see below), represents the early core of the foundry site, including the earliest areas of manufacture, with the areas of welfare and administration provision.

The 'core shop' and the 'No.5 mould line' exhibit similar structures, form and materials to the fettling shop and were probably built within ten years of each other.

The administration block and 'canteen' are single storey structures with flat roofs built in brick with the most minimalist hint of modernist styling (eg flat eaves, lintel height band and plinth band). There is a relatively decorous entrance in the Princes Drive façade sporting a hard wood, eight-panelled double door. [see photo No.2] The interior shows late C20th surface remodelling and all the interiors have been severely damaged by illegal salvagers searching out metalwork.

Victorian period structures and buildings

The original admin block remains as a discrete, single storey structure. It exhibits many of the characteristics of later C19th brick buildings. The façade, [see photo No.3] fronting onto Princes Drive, exhibits stone window lintels and sills with chamfered reveals and heads. There is an elaborate, moulded brick string course below the parapet, and decorative gauged brick work in a herring-bone pattern below relieving arches. A plinth course is marked in blue engineering bricks. The interior is similar degraded as the later canteen and admin block; this level of survey being unable to identify any diagnostic evidence of the Victorian period.

The core shop has much the same layout as the later additions/alteration described above. The distinction between them, however, is archaeological expressed. Firstly the Victorian roof structure survives. It has the same form as the later extensions to the south and east, but the trusses are different. The Victorian trusses include caste, 'V' shaped brackets (narrower in the southern range than those in the northern range of the 'L'). [see photo No.4] In addition, a break in the brick work can be seen at the western elevation of the core shop, with the larger Imperial sized bricks to the north



and the later, smaller C20th bricks to the south. [see photo No.5] The long north elevation of the core shop exhibits complex multi-phasing of its brick work. Original relieving arches have survived, but there are number of phases of intrusions throughout the C20th, largely in the form of doors and windows. [see photo No.6] It is interesting to note here that the floor levels are high enough to allow for easy loading onto railway wagons (a rail spur penetrated the alley between the admin block and the core shop). It is likely that the small Victorian building/structure seen within the internal angle of the 'L' of the core shop has elements that survive into the C21st.

Conclusion

Throughout the site the standing fabric has been highly degraded through its use as a manufacturing site (change and remodelling to meet market needs and to keep step with technological innovation) and, since 2007, with the illegal trespass and forcible removal of metalwork. Much of the industrial age history of the site's development through the C20th is well represented in relevant mapping. The most complex period of development and expansion occurred in the earliest decades of the C20th, and the interface between the Victorian structures and the post 1905 development is the most significant.

It is my view that the area of the site that includes surviving pre-1925 fabric should be recorded to a level that allows for interrogation of this interface. I would suggest level 2 (English Heritage's *Understanding Historic Buildings*) would be appropriate for the core shop, interior and exterior, and for the exterior of the canteen and admin blocks. I would suggest that the interior of the admin and canteen blocks could be recorded to level 1.

I will phone you after 2.30pm on Friday 7th October to discuss this matter with you.

Yours sincerely

Jonathan Smith

Principal Archaeologist

For and On Behalf of Waterman Energy, Environment & Design Ltd

Appendix 4 The photographs (on CD)

Missing photograph numbers were void shots.