

4.0 Geological, historical and archaeological background

4.1 Geological background and land use

Worcester lies in the valley of the River Severn, just to the north of its confluence with the River Teme. The east bank of the Severn is a sand and gravel terrace. The site lies in the valley of a former tributary of the Severn, the Frog Brook, part of the former course of which is used by the Worcester to Birmingham Canal. Diglis Road runs along the foot of a scarp slope which rises from 15.93 to 29.30 metres OD at its summit on Bath Road.

The underlying geology of the site consists of beds of alluvial drift deposit over the Eldersfield mudstone formation.¹ A ground investigation conducted by Shire Geotechnical in September 2001 showed that in some places the ground level was made up of deposits of ash, kiln wasters and building debris. At Portland Walk the alluvial silts are not encountered until a depth of 3.5 metres below the present ground level. Some localised deposits were found to have elevated mercury levels present; removal of these deposits is recommended by the geotechnical engineers. A similar study at Diglis Basin showed analogous results.

4.2 Historical background

The Worcester to Birmingham Canal was opened in 1815. Near its junction with the River Severn lie the inner and outer Diglis Basins. Here goods brought up the River Severn were transhipped from Trows (and vice versa); some of these goods would have been stored in warehouses. It is possible that the small complex behind numbers 48 to 52 formed one of these areas. Building B, with its crane anchored into its canal side elevation on the and double doors, clearly demonstrates its former purpose. There were other partly enclosed areas to the north-west along the canal itself named Court no. 1 and no. 2 but these areas appear likely to have been used, at least partially, for residential houses.

There is no cartographic evidence for buildings on the site until 1840 (Figure 2). This suggests that only numbers 48 to 52 were built by this time, but by 1884 (Figure 3) the whole complex (Areas 1 and 2) were completed in the form they were to hold until after the 1940s. By 1884 area 1 (Fig 3), comprised numbers 42 to 46 fronting the Diglis Road with wash houses behind and a substantial wall separating it from Court no. 2.

Area 2 was made up of Numbers 48 to 52 (Building A) with enclosed areas (possibly gardens) fronting onto Diglis Road. The ginnel between Numbers 50 and 52 gave onto the yard where there were probably fenced-off privies (see Figure 3) set in the middle. Number 52 by then had an annex from which the row continued down to the canal. The annex to 52 has a catslide roof and it is likely that this continued beyond so that the whole row faced onto the yard – this would have provided a distinct division between Areas 1 and 2.

The crane anchored into Building B is not shown until 1928 (see figure 8), but one was in operation elsewhere on the inner basin in 1884. It must therefore be assumed that the crane was incorporated into Building B some time after 1884 but before 1928.

¹ British Geological Survey 1:50000 geological map, Worcester Area, sheet 199

The complex formed by Area 2 remains in one ownership. It was ultimately a cardboard box factory with the manufacturing carried out in Building B but the registered office was in number 52.

4.3 Archaeological background

One of the most important aspects of this site is the possibility for the preservation of environmental evidence. Works carried out to the west of the river at Lower Wick Sewage Works, Bromwich Road stated that the deposits next to the river may well contain prehistoric deposits including environmental material which '*would be regionally significant*' (Woodiwiss and Pearson, 1999, 13). Indeed the palaeoenvironmental evidence from that site showed that the alluvial deposits preserved pollen reasonably well, and therefore it is highly probable that the Diglis Road site could contain evidence of past environments. Furthermore, palynological (the study of pollen grains and spores) analysis at Diglis Basin yielded good results with one sample containing 25 taxa (Harris, 2001, 15).

Prehistoric activity in the area has been found in the form of artefacts recovered during river dredging. A Bronze Age socketed palstave was located in dredged material in 1840 (Carver, 1980, 303), together with a Bronze Age sword in 1902 and a Bronze Age flint dagger near Diglis Docks in 1956 (E.C. Harris, 2003, 13). The possibility of these artefacts representing some sort of votive offering cannot be overlooked as rivers and marshy areas during the Bronze and Iron Ages seem to have had a symbolic character.

The Roman settlement in Worcester seems to have been primarily industrial in character, with a highly developed iron smelting industry, possibly already active at the time of the Roman occupation and which appears to have continued until their eventual withdrawal. The site lies approximately 350 metres south of the southern limit of known occupation: possible evidence of Roman occupation was first observed when the castle motte was removed between 1830-1833. Roman burials and other finds of this period have been discovered nearby at St Alban's School and the Royal Worcester Porcelain Factory (WCM 100041, 100185, 100379, 100380, 100381, 100382). The presence of a Roman period harbour or ford in the area of the outflow of the former Frog Brook, now the Diglis Basin, has been proposed due to finds of pottery of that period found in the area during excavation of the river lock (Carver, 1980, 21). Ten Roman coins were also found as a small hoard during a redevelopment excavation at Portland Walk in 1963.

Diglis is first recorded as the place name '*Dudleg*' in 1232. The Frog Brook is known to have occupied a course that took it south of the east side of the city towards its confluence with the River Severn, some way below the Diglis Basin. The low lying nature of the land and the presence of underlying beds of marl make it likely that the Diglis area was a marsh in the early medieval period. Tracing the exact course of the Frog Brook has been made more difficult by the probable existence of multiple braided channels; environmentally of course this could be very interesting with the possibility of waterlogged palaeochannels.

Little evidence of medieval occupation has been found in the area, probably due to the low-lying nature of the land and the extended use of the area as pastureland. Place name evidence suggests that the area was in use as pastureland in the 15th century. Additionally, pollen evidence from Diglis Basin suggests that some of the area at least was under cultivation in the medieval period (Harris, 2003, 16). Diglis is referred to as '*meadow called Dudley*' in 1490 (Mawer and Stenton 1927, 163). The meadows at

Diglis formed part of the Bishop of Worcester's demesne in the medieval period, and the Prior of Worcester took a rent of £6 from the pastureland in 1535.

Early post-medieval remains in the lower Frog Brook area may include remains of a causeway built to raise it above the level of the marshy ground which possibly ran along the line of Diglis Road (Carver, 1980, 303). This is noted as being in existence by the 16th century at least, but this is not to say that it began life at this time.

The Civil War had a major impact on the city defences, with a system of outlying fortified redoubts linked together by deep trenches with ramparts laid out on the east side of the city (see Figure 2). These entrenchments had a relatively short lifespan and were extensively slighted after the defeat of the Royalist garrison by Parliamentary forces in 1651. Parts of the Civil War fortifications ran through the Diglis area. Two bastions were located where Diglis meets Severn Street (WCM 96153), and were joined by a section of the entrenchments (WCM 96155). Young's map of 1795 shows an interesting feature to the south of the canal which is later marked as a 'fort'. This may also be related to the Civil War fortifications although it is situated just outside the city boundaries.

In 1815 the Birmingham to Worcester Canal was completed. The Severn Navigation Weir and Lock, to the south west of Diglis Dock, was constructed in 1844. The area soon experienced rapid development, with industrial activity such as porcelain production and associated trades becoming further developed along the canal side and around the basins near the canal's confluence with the river. Regular dumping of dredged material from the river, and soil resulting from the digging of the canal and its basins, has resulted in a layer of re-deposited soil over the entire site to an average depth of 2.5 metres over alluvial soil (Harris, 2003, 11).

A detailed report relating to the archaeological and historical background of the site at Diglis Basin was prepared by E C Harris (2003) and the development of the canal itself and the buildings surrounding the basins is detailed by Dr P Hughes (1991). This information will not be reproduced as part of this project.

The basins were completed in 1815, and the Birmingham to Worcester Canal was opened in December that year. The original arrangement was for a small Outer Basin, a larger Inner Basin, and two warehouses, but it was apparent from the outset that the Outer Basin was too small. This was enlarged in 1818 to its current size. Other important additions to the layout included the cutting of the Finger Basin and the Dry Dock, all of which had taken place by 1821. A further wet dock (River Basin) was constructed to the south of the main Diglis complex in the 1890s. This dock was located near the Diglis Lock and Weir which had been constructed in 1844. This resulted in a substantial raising of the level of the River Severn. Numerous buildings stood around the basins providing warehousing, stabling and offices.

In September 2004 Archenfield Archaeology monitored a phase of ground works at Portland Walk carried out by Stats Ltd (Specialist Engineering Materials and Environmental Consultants). This consisted of drilling a total of 13 boreholes for a geotechnical and geoenvironmental report across the Royal Worcester Porcelain redevelopment site; 6 of which were positioned around the Portland Walk site. These showed that the made ground comprised up to 4 metres of sediment. Similarly it indicated that the natural gravels underlying the site sloped down to the river from 1.3 to over 4 metres. Towards the western end of the site it was clear that there were deep alluvial sediments, thus supporting the fact that environmental evidence may well be

preserved (Archenfield Archaeology, 2004, forthcoming). These sites can be viewed as very similar in character.

An archaeological evaluation carried out by Archenfield Archaeology (Sherlock, 2003) at Diglis Basin showed no trace of any ground surface dating from the medieval, Roman or earlier periods. This may be due to the area having been levelled prior to or during the construction and creation of the canal basin or the subsequent erection of warehousing. The only features and deposits encountered were of later post-medieval origin, and are consistent with the known pattern of land use in the 19th and 20th centuries. The natural clay deposits however were present relatively close to the current ground surface in this area, as opposed to the majority of the rest of the site where borehole and test pit data showed that the ground levels had been substantially made up with redeposited material. The large deposit of alluvial material in one of the trenches indicated the possibility of undisturbed beds of waterlogged material relatively close to the surface (this lay within 1 metre of the current ground surface).

5.0 The buildings



Figure 2: The buildings from 42-52 Diglis Road

5.1 Site and situation

In general terms the site lies around 1km south of Worcester Cathedral and is situated between the inner canal basin of the Worcester and Birmingham Canal and Diglis Road. The curtilage of the site is defined on the northwest by the canal basin, on the north-east by the former Court no. 2, on the southeast by Diglis Road and on the southwest by a common wall with the adjacent Public House. Historically there were two distinct areas within the curtilage.

Area 1

The area to the north is occupied by Building D and Building E (see Figure 2). Building D is largely built on virgin land but Building E occupies the site of three former dwellings, now single-storey garages (no's. 42 to 46). A substantial wall lies between this area and the former Court no 2. There are likely to be remnants of other buildings below ground (Figure 3).

Area 2

This was, until after 1940, divided from Area 1 by a row of buildings continuing from the north wall of Building A (no. 52) to the canal. Numbers 48 to 52 were dwellings fronting onto Diglis Road. The rear of the buildings face onto a yard bounded by the rear of Building B. Thus, as built, the whole enclosed a court which could only be reached through the ginnel between numbers 50 and 52 except from the open area leading from the canal. A modern two-storey extension to Building B (Building C into Building D) continues the canal front cutting across what was mainly virgin ground. At the time these

were built, clearing of the no.52 extension allowed a gap to be left between Areas 1 and 2.

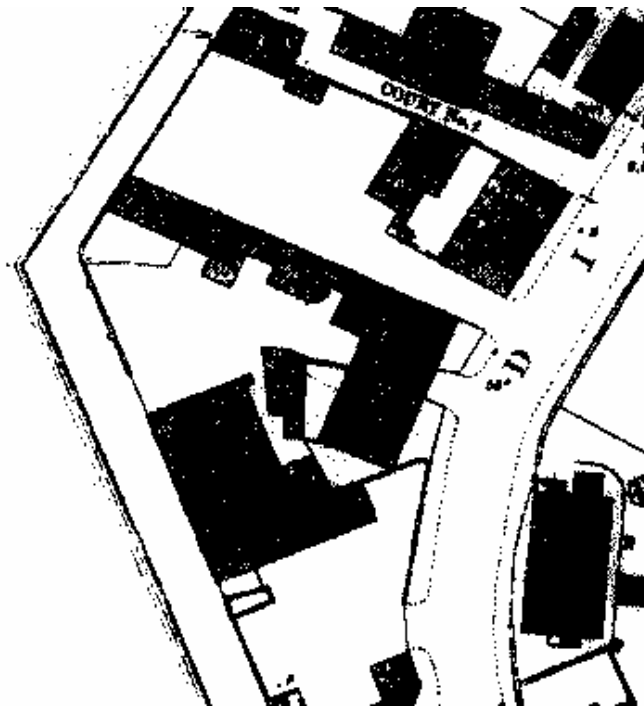


Figure 3: Extract from the 1886 Ordnance Survey map (not to scale)

5.2 Description of the buildings

Building A (Numbers 48 to 52 Diglis Road)

This group of buildings forms an L-shape extending from its front on Diglis Road towards the canal. It is comprised of three terrace dwellings (Fig 4) with a front articulation as follows:

Ground floor:

1. Window 2. Door 3. Door 4. Window 5. Ginnel 6. Door 7. Window

First floor:

1. Window 2. Blank 3. Blank 4. Window 5. Window 6. Blank 7. Window.

The front elevation has some architectural pretensions (Plate 2). A dentil course runs beneath the eaves. The front windows have sashes without horns and are of six lights in each, making twelve lights to each window. Above the ground floor doors and windows are stone segmented voissours with clear-cut arrises which give distinction to this elevation. Similar detail can be found in some of the double-fronted houses along Diglis Road but is unusual in such modest dwellings as no's. 48 to 52. The rear of no's. 48 and 50, being out of sight, lack this detail (Plate 3).



**Plate 1: Numbers 48 to 52 from the southeast. Number 48 lies to the left.
Note the ginnel between Numbers 50 and 52.**



Plate 2: Numbers 48 and 50 Diglis Road



Plate 3: Rear of Numbers 48 /50 Diglis Road

Each dwelling has a front door and a side door – those to Numbers 50 and 52 lie either side of the ginnel whilst that to Number 48 faces the boundary wall with the Public House.

The frontal symmetry of the houses belies the complexities and differences which lie within. Numbers 48 and 50 have steep boxed-in staircases which run in opposite directions from a common but small lobby. Access to a wash house for Numbers 48 and 50 lies at the back of Number 50 which lies beneath one of its bedrooms – the space taken up by this appears to have been compensated for by a room above the ginnel.

Number 52 is separated from Numbers 48 and 50 by the ginnel (see Plate 1) and is considerably larger. It has, for instance, a more spacious hall and an open staircase with balusters. In addition it has a cellar and extends beyond the rear walls of Numbers 48 and 50 into the L at the rear. At a later stage an annex was built extending the L which terminated in the range running down to the canal. This was truncated after 1940, but together with the annex had catslide roofs which dropped towards the yard from the rear wall which formed the divide with Area 1. The annex is chamfered inwards to form a narrowing neck where it joined Number 52. The back wall viewed from Area 1 shows the building break where the annex was added (Plate 4). The annex contains the wash house for number 52.



Plate 4: Building break between Number 52 and the annex (on the right)

Within Numbers 48 and 50 there are some original features. These include early Victorian hob grates in the bedrooms (Plate 5) and a round-hooded fireplace in a living room.



Plate 5: Early Victorian hob fireplace in Number 48

Building B

On the canal side, but outside the curtilage of Building B, lies the hand-operated crane. This is one of two marked on the OS map of 1928 around the inner basin and probably moved here after 1884 from elsewhere when its three points of anchorage were built into the wall of the building. Three wrought-iron strips for this were bolted internally and fixed by side plates against the wall (Plate 6).



Plate 6: One of three anchorages for the crane built into Building B. Note the spacing plate to the left.

The crane is of primitive design with a combined wood and cast-iron jib (Plate 7) set on a fixed pivot. The axle is of square forged section but iron castings make up part of the jib, cogs and ratchet mechanism. It has no maker's mark and most of the nuts are square headed and hand forged – all this suggests that it was put together by a blacksmith from pre-cast parts. In basic form it appears to have been built around the time the canal was opened in 1815. It has a fixed reach limiting it to feeding the first or ground floor double doors of Building B from the canal (Plate 8).



Plate 7: The fixed-jib crane of around 1815

In more recent years, Building B was used to manufacture cardboard boxes by Maxwell Nicholls Ltd but is now used to fabricate horsebox windows. At the northwest end the building now joins the post-1940 Building C but, as built, was detached. On the east elevation there were some period additions but these were altered in modern times to give covered access to Number 48. The canal front is of heavily mauled and bodged random brickwork with the fenestration much altered, but some segmented-arched windows can be discerned (Plate 8). The double doors at ground and first floor levels remain in their original positions but the thin line between the eaves suggest there might have been a pediment above, or the roofline possibly lowered. The question of whether a jury was once here is pertinent. The crane appears to have been a later addition and some means of raising goods from boats would have been needed – a jury would have been the answer. The yard wall (north-east) has a modern external stairway with some windows on the first floor could be the originals of a type often found in engineering works.

The pull of the crane on the three internal anchorages has played havoc with the wall which is *in extremis*. In attempts to alleviate this consols and later, internal pilasters, were inserted. Transverse beams and open joists support the first floor. These too, and the weight they carried, exerted stress to the outer walls. Three (originally four) cast-iron pillars (Plate 9) set centrally along the lower floor helped support the upper floor and counteract the pull of the crane. The ground floor is raised slightly at the northwest end and here the original fourth pillar has been removed.



Plate 8: The canal front of Building B

The crane jib will only reach to the double doors on the two storeys of the building. Building C lies behind the crane. Note the mauld wall on Building B



Plate 9: The ground floor of Building B showing cast-iron pillars

The first floor is reached by a boxed-in wooden ladder/stairway. Here the pine roof timbers of King Post construction were originally exposed but are now partly hidden by a false ceiling.



Plate 10: Building D from Diglis Road the annex to Number 52 on the left (Building A).

Buildings C and D (Plate 10)

This post-1940 range lies mostly within Area 1 and extends across the virgin ground which lay between Building B and the wall with Court no. 2. However, a small part of the L-shaped arm would have been cleared to make way for it.



Plate 11: The site of the wash houses to Numbers 42 to 46

The wash houses are where the two cars on the left stand with the dividing wall between Area 1 and Court no. 2. The garages on the right stand on the site of the original three dwellings

Building E (Numbers 42 to 46 Diglis Road)

The garages to the north of building A are brick-built with a corrugated iron roof and have entrances from Diglis Road and the rear courtyard. The front of the building may once have been a working garage with two windows and garage doors on the east elevation facing the street, and a single door in the south elevation leading to possible office space. The rear of the building has 3 garages with wooden double doors.



Plate 12: The west elevation of building E and scars of the east-west brick wall

There appears to be little that remains of the three dwellings which once stood here but their location was on the site of the present three garages. The three wash houses would have abutted onto the dividing wall between Area 1 and No. 2 Court (Plate 11).



Plate 13: The front elevation of building E

5.3 Conclusions

Area 1 contains little of its original features. The open frontage to the canal has been built over by a motley group and Building E appears to have little to remind one of the dwellings which were once there. Only the dividing wall between No. 2 Court and the area remain as an obvious reminder of its former purpose.

Area 2 retains a significant building stock from the mid-19th century. It appears to be a survival of one of three Courts which bordered the Worcester and Birmingham Canal: it also has the added interest of a ginnel. Although pierced on the northwest the Court therefore has group value. For instance, the associations with the canal are paramount and the crane, although outside the curtilage, is physically tied into Building B. The external appearance, together with internal fittings, suggest that Building A, with its three dwellings, dates from the late Georgian to early Victorian period. Although modest they have external architectural merit and are an integral part of the group. The architectural front is not without precedent and can be found in many light industrial complexes, particularly in the Potteries.

The modern accretions to be found in Buildings C and D do much to mar the complex and how these features might be handled invites sensitivity - they could obviously be cleared to returned the site to its original state as open land. Alternatively, considering the poor state of the canal front wall to Building B (which will undoubtedly need rebuilding) an extension in a similar material to this might be considered.

John van Laun PhD FSA MIFA 20 May 2005

6.0 Cartographic regression

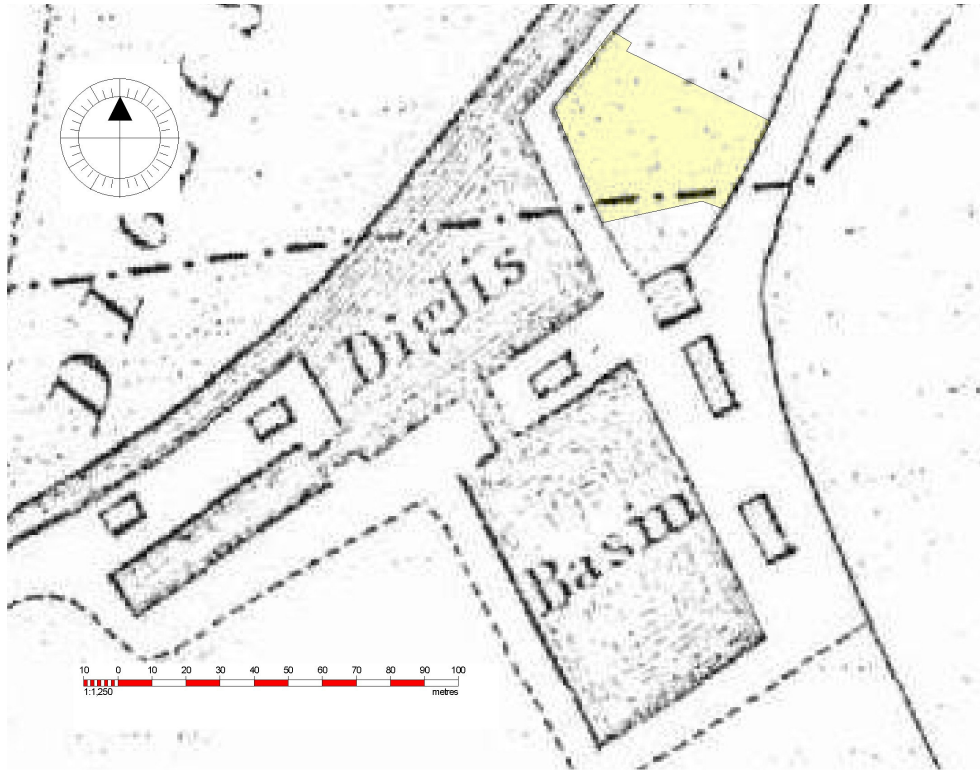


Figure 4: Extract from Eaton's Map of 1829 with approximate area of the site

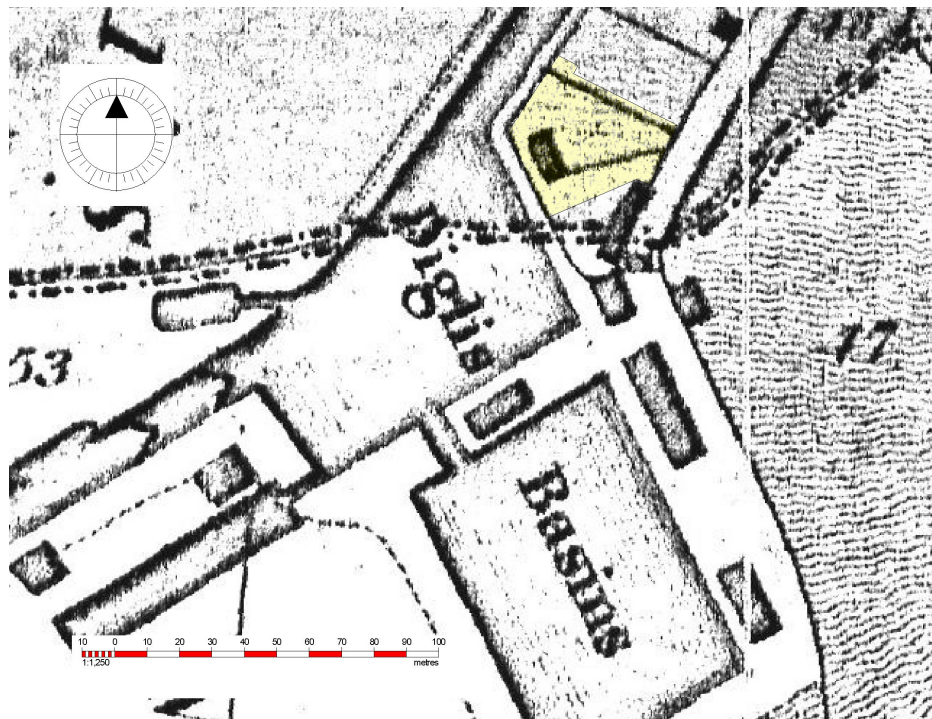


Figure 5: Extract from Dewhurst and Nichols (1838) showing approximate area of the site

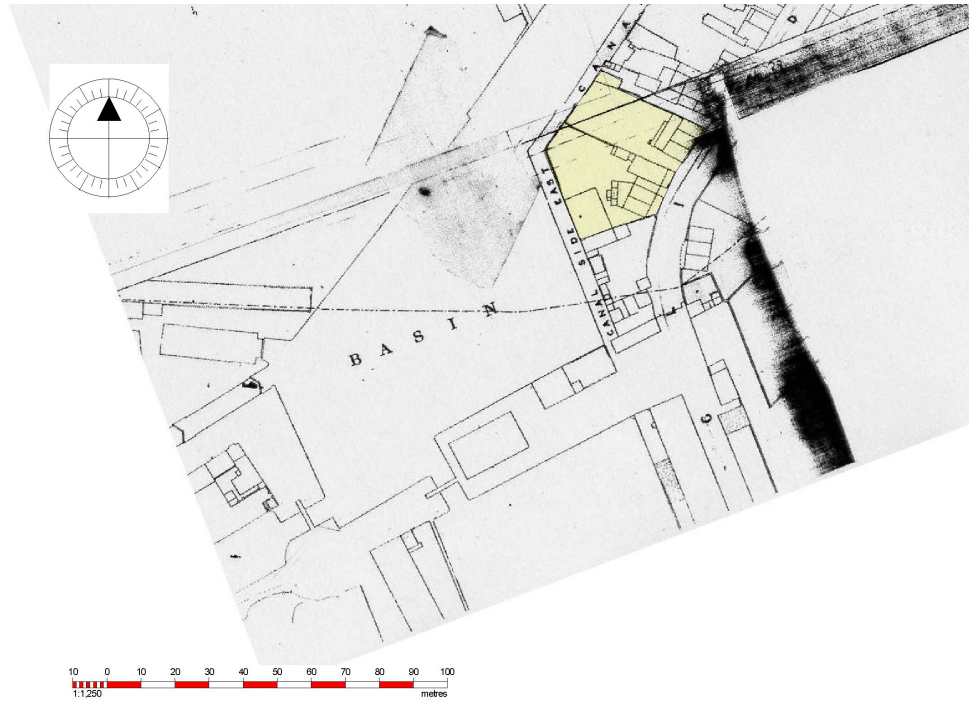


Figure 6: Extract from the 1870 Board of Health Map showing approximate site outline

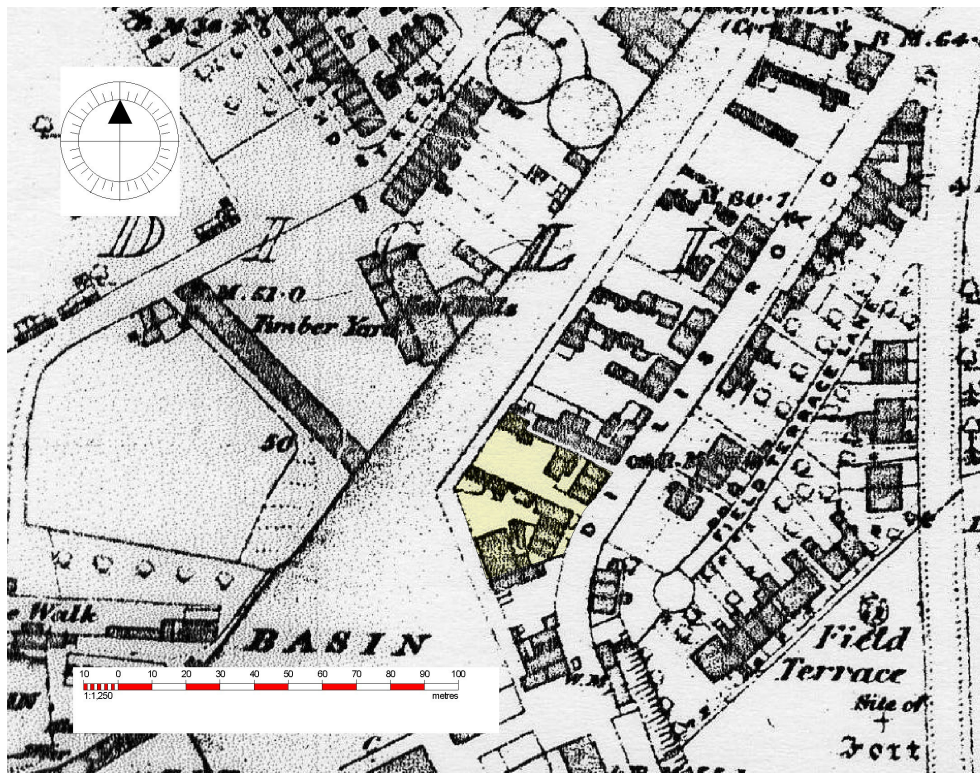


Figure 7: Extract from the 1884 1st Edition OS Plan showing the approximate area of the site

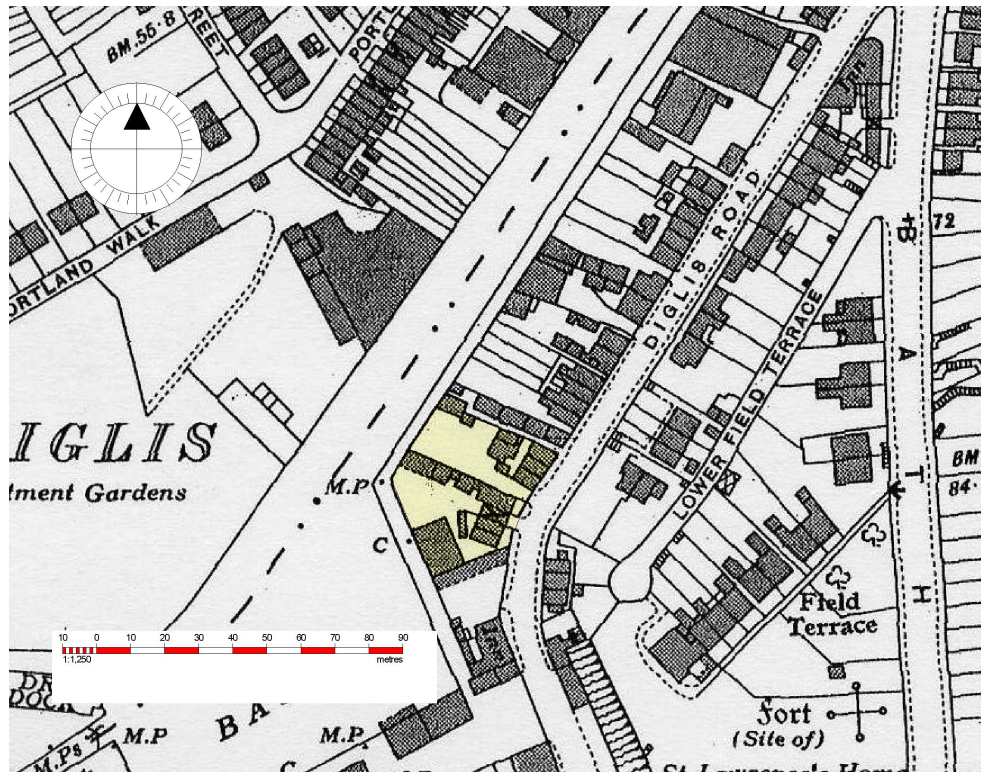


Figure 8: Extract from the 1928 OS Plan showing the site outline

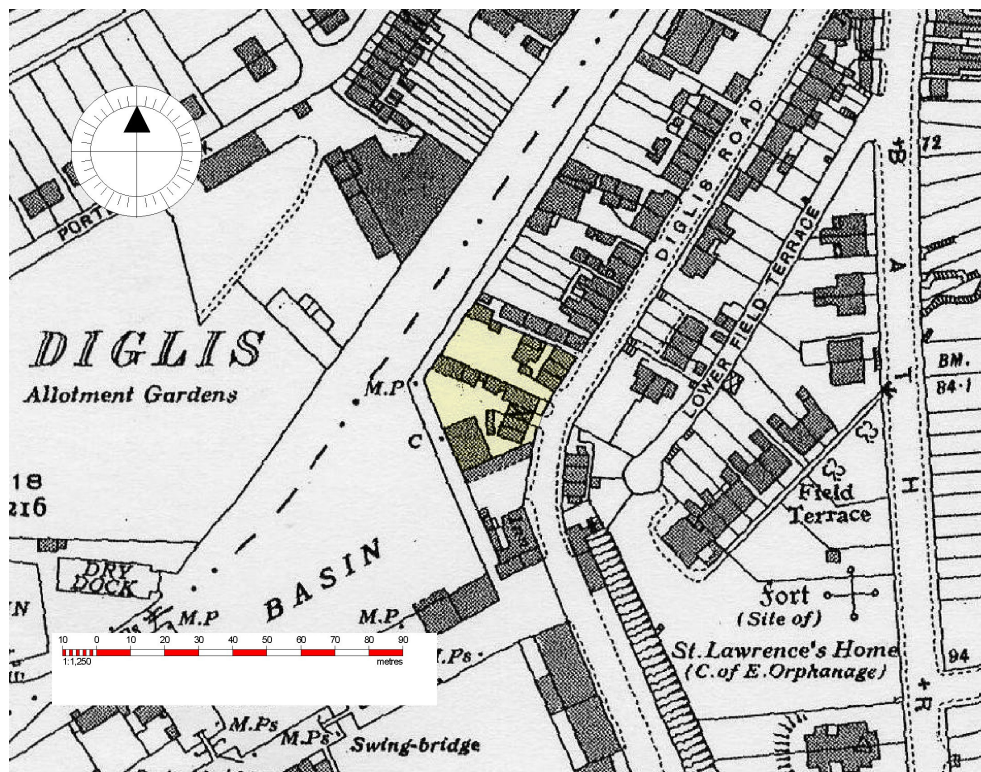


Figure 9: Extract from the 1940 OS Plan showing the site outline

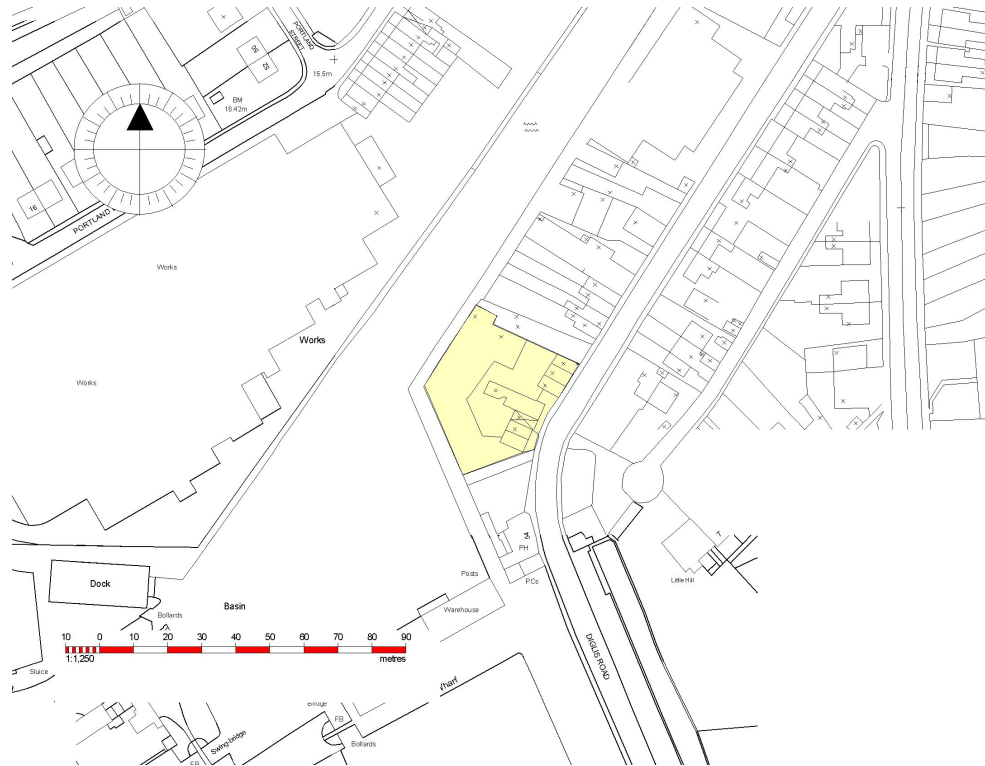


Figure 10: Extract from the modern OS Superplan data (reproduced under licence number hemc_00495300) showing the definitive site outline

6.1 Cartographic discussion

The earliest map included in this study is Eaton's Map of 1829 (Figure 4). No earlier maps are included as they show no habitation and prove difficult to accurately locate the site on. Eaton's Map shows the site prior to the construction of any buildings, although published soon after the canal was opened. The dry dock on the opposite side of the canal does not appear until Dewhurst and Nichols Map of 1838 (Figure 5). This map shows the first appearance of the millwright's building and the beginning of the development of this site. Figure 6, the 1870 Board of Health Map shows the rapid expansion of building in this area with the growth of canal-side industry. By this point building A, B and E (see Figure 2) had been constructed and the open arrangement of the buildings with the courtyard next to the canal was in existence together with the ginnel. The building stock shown on the site on the Ordnance Survey map of 1886 seems to have remained in the same configuration until at least the 1940's as the Ordnance Survey map of 1940 (see figure 9) shows the footprint of all the buildings to be unchanged.

7.0 Conclusion

This report describes the general history of the Diglis Meadow/lower Frog Brook area, and in particular 42-52 Diglis Road. It is a compilation of all known historic and archaeological information about the site. No excavation has ever been carried out on the site apart from the digging of the canal itself and its basins in the early 19th century. This produced animal bones and Roman finds. The presence of Roman finds has led to the suggestion that there might have been a harbour for boats on the Severn where the Frog Brook flows into it. Trenches on the development site could shed light on this subject.

Historically the area was waterlogged and liable to flooding, and thus would have needed drainage systems in the form of ditches dividing the area in order to be utilised for agriculture. Although there is no substantiation as yet to support this, the nearby presence of pollen remains which provided evidence for early agriculture would indicate that cultivation of neighbouring areas had commenced by the late Iron Age-early Roman period. This being the case, the possibility of prehistoric features containing material culture is plausible. Similarly the presence of three high status Bronze Age artefacts from dredged river material suggests the possibility of votive offerings which were often associated with marshy areas and rivers during this period.

Cartographic evidence indicates that there was no settlement on the site before the coming of the canal and that the land was used for pasture and market gardens. The height of the ground which consists of alluvium over Keuper Marl was augmented by dumped material that came from dredging the river, excavation of the canal and its basins, and dumping of general waste from the city and the nearby Porcelain factories.

The post-medieval phase of activity at this site seems to be related to the canal, with '*an expensive crane*' (Hughes, 1991, 20) and a strong connection with milling; part of the site being occupied by a millwright. The below-ground archaeology of these buildings and their industrial past could well prove interesting if they are simply masked by the later concrete surfaces. All of these buildings and the possibility of buried archaeology could provide us with an insight into the industrial development along the canal that has continued until relatively recently.

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| Dewhurst and Nichols | Plan of Worcester, 1838 |
| Ordnance Survey | 1870 Board of Health Map |
| Ordnance Survey | County Series, Worcestershire Sheet XXXIII75, 1884 |
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| Ordnance Survey Superplan | Hemc_00495300 |

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