



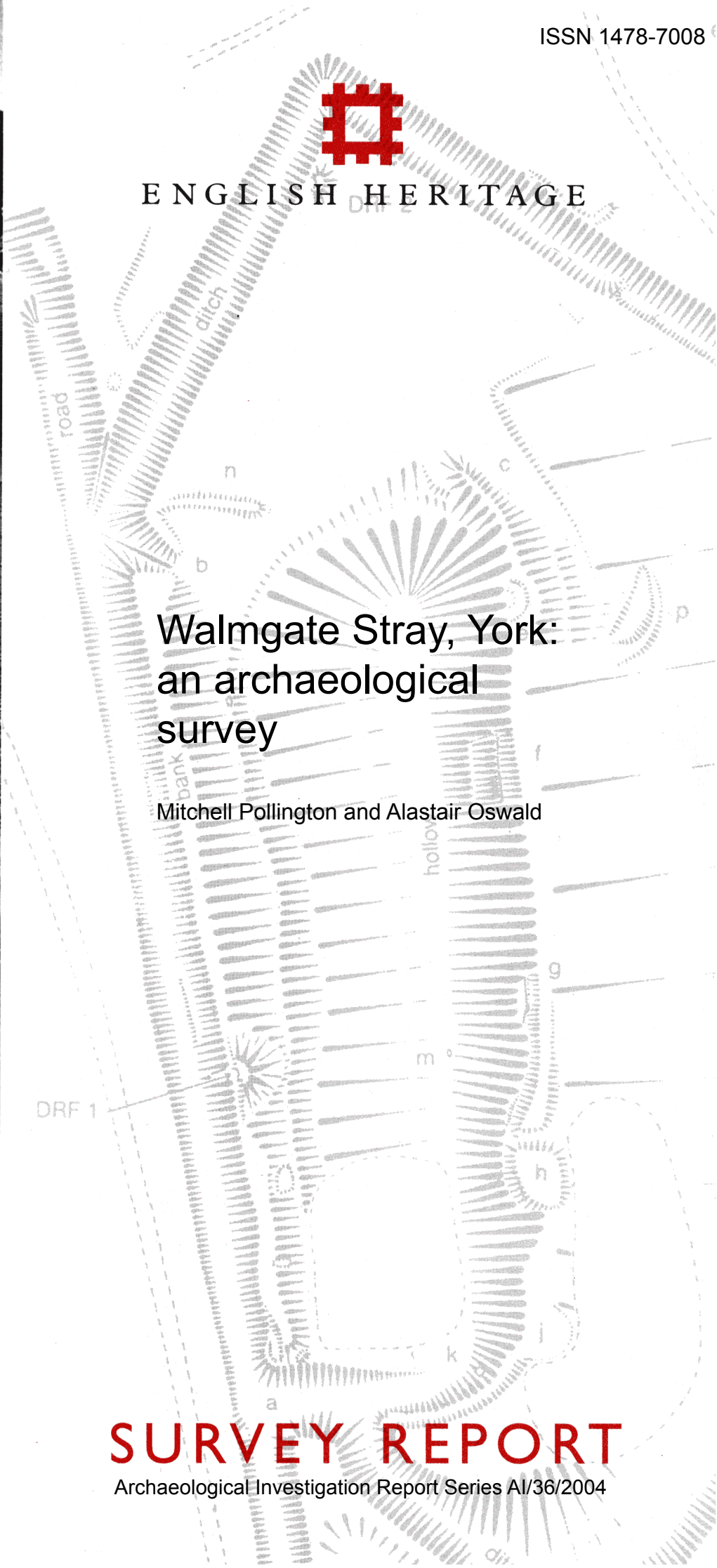
ENGLISH HERITAGE

Walmgate Stray, York:
an archaeological
survey

Mitchell Pollington and Alastair Oswald

SURVEY REPORT

Archaeological Investigation Report Series AI/36/2004





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**WALMGATE STRAY, YORK:
AN ARCHAEOLOGICAL SURVEY**

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1. INTRODUCTION AND BACKGROUND TO THE SURVEY

In April and May 2004, an archaeological investigation and analytical field survey was carried out by English Heritage on Walmgate Stray, York (Figures 1 and 2). This survey formed part of a national project by English Heritage, to investigate the archaeological content and historic environments of a selection of urban commons in England. Surviving common land has, in many cases, remained largely uncultivated since the medieval period, providing the possibility for the survival of early features as upstanding remains within an urban setting.

Four main areas of common pasture, known as 'Strays', lie outside the city walls of York (Figure 2). These are Micklegate Stray, consisting of Knavesmire and Hob Moor, Bootham Stray, Monk Stray and Walmgate Stray. Walmgate Stray was chosen for detailed investigation following the recognition of surviving earthworks in 1999, and because of the lack of any previous archaeological survey of the area. This investigation also provided the opportunity to involve local people and inform them of the history of the Stray.

Walmgate Stray consists of around 32 hectares (79 acres) of pasture, located to the south-east of the centre of York, centred at National Grid Reference SE 615 505. It is bounded to the north by The Retreat, a psychiatric care home; to its west by the Imphal Barracks and the North Yorkshire Police Headquarters, which occupies the site of a former cavalry barracks; to its east by the main campus of the University of York; and to its south by Heslington Lane (see Figure 3). The main area of Walmgate Stray, between the southern boundary of The Retreat and Heslington Lane, is known as Low Moor. Although the Stray remains largely open pasture, a large part of its north-western corner is occupied by council allotment plots, known as Low Moor Allotments.



Figure 1
The location of
Walmgate Stray

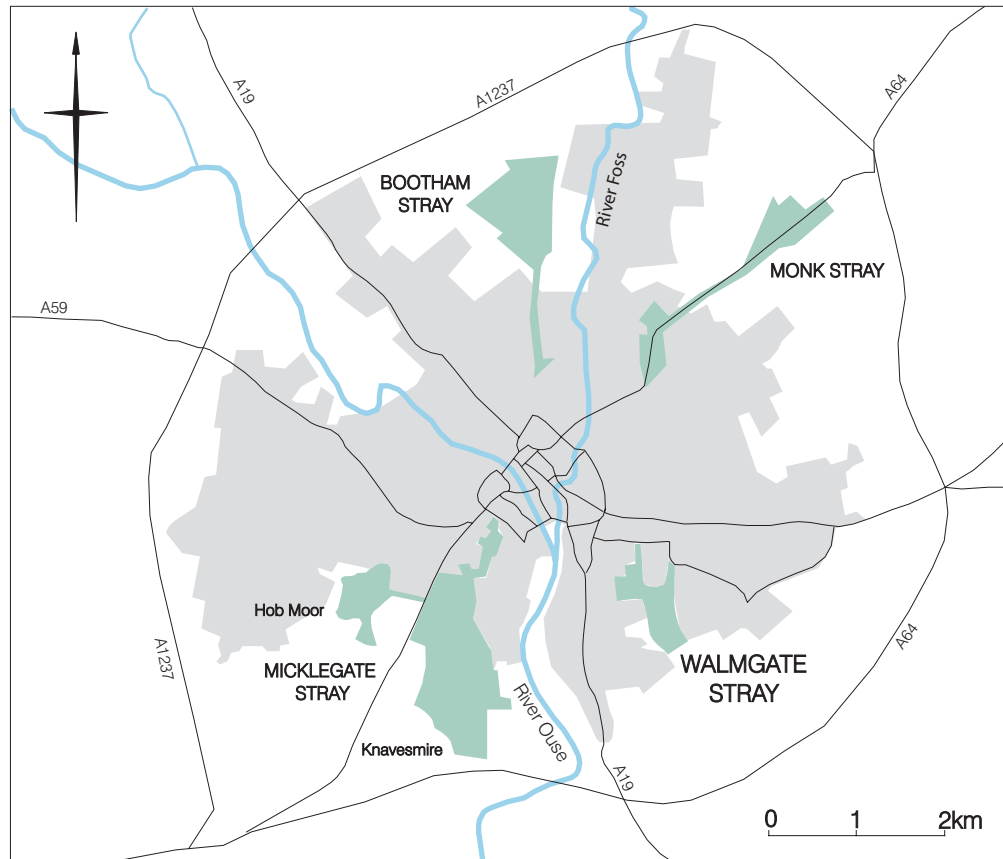


Figure 2
The Strays around York

The archaeological field survey encompasses the whole of the present area of Walmgate Stray. Documentary and cartographic research into areas outside of the Stray has also been carried out, in an attempt to understand the common land's relationship with the surrounding landscape. The field survey has identified a variety of earthworks, including medieval and Napoleonic ridge and furrow ploughing, First World War practice trenches, and a Second World War assault course. The assault course earthworks, extending north to south along a strip of land between the Low Moor Allotments and the western wall of The Retreat, were surveyed graphically at a scale of 1:1 000. Other features were recorded using both graphic survey and Global Positioning System (GPS) satellite mapping equipment. The archaeological investigation was carried out in detail as a Level 3 survey (as defined in RCHME 1999).

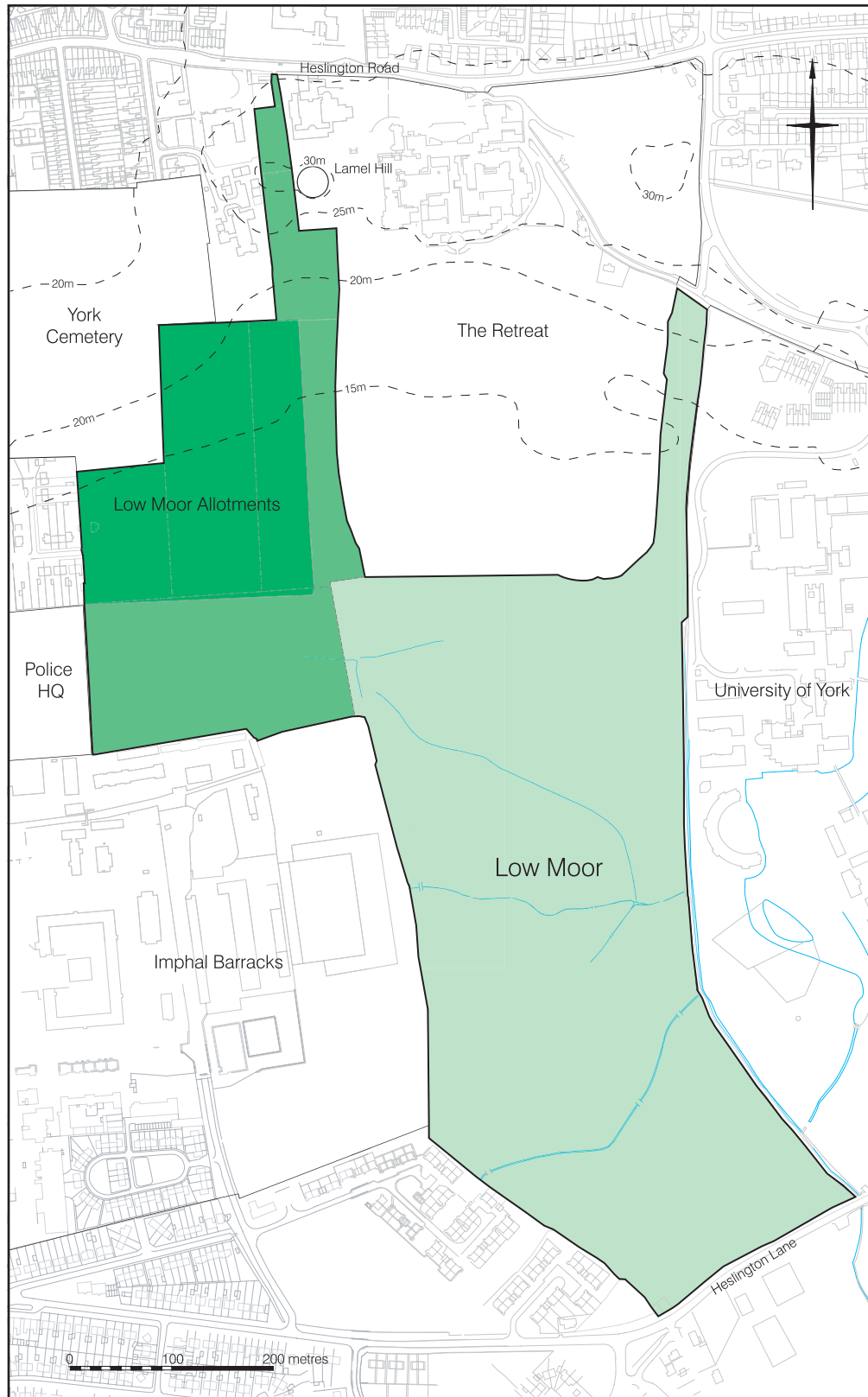


Figure 3
The present area of
Walmgate Stray.

Based on Ordnance
Survey mapping.
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2. GEOLOGY, TOPOGRAPHY AND MODERN LAND USE

Walmgate Stray consists of two main areas of land. The first is Low Moor which makes up the main body of the Stray, and is part of the original area of common land, which originated in the medieval period and was formally enclosed in the mid-18th century (see Section 4). It is a flat, low lying area of open unimproved pasture, containing small clumps of scrubby trees and bushes, predominantly hawthorn. It is criss-crossed by a series of drainage channels and small canalised streams, most of which are aligned east to west and drain eastwards. Parts of the area are still prone to waterlogging and localised flooding. A narrow strip of ground also extends northwards from the north-eastern corner of Low Moor, running along the eastern boundary of The Retreat.

The second area of land is situated to the north-west of Low Moor and was incorporated into the Stray in 1828 (see Section 4; Figure 5). This area largely sits on the south-facing slope of a ridge of higher ground. Here the soil is lighter as it overlies a deposit of glacial sands and gravels; the English Heritage survey suggests that this land was ploughed over a prolonged period prior to its incorporation into the Stray (see Section 5.1.2). It is now largely occupied by council allotments, although a rectangular block of pasture still survives between the southern boundary of the allotments and the northern boundary of Imphal Barracks. Another strip of open ground, between 35m and 50m wide, runs north to south between the allotments and the western wall of The Retreat. An ornamental line of trees, predominantly sycamores and poplars, has been planted along the centre of this strip, giving the landscape in this area a more 'parkland' feel (see Section 5.3.1).

Walmgate Stray is currently used as pasture for cattle and also provides an area of recreation for local residents, with a football pitch occupying its south-east corner adjacent to Heslington Lane (see Section 5.3.2). The Stray has unrestricted access to the public, with entrances on Heslington Road, the University of York campus, Kilburn Road and Heslington Lane. The only paved path on the Stray is a cycle route, which runs through Imphal Barracks and eastward across the Stray, into the University of York campus. There is, however, a network of informal footpaths crossing the Stray.

3. PREVIOUS RESEARCH

There has previously been no formal archaeological survey of Walmgate Stray, and only limited historical research has been carried out on the area. No archaeological features have been recorded by the Ordnance Survey and there were no records of sites on the Stray in the English Heritage national database of monuments (AMIE), prior to the 2004 survey.

During the mid-1970s, field reconnaissance was undertaken by a team from the Royal Commission on the Historical Monuments of England (RCHME 1975). This identified a tract of Napoleonic ridge and furrow ploughing located at the southern end of Low Moor. Field reconnaissance was also carried out in 1999 by English Heritage, and a range of features were noted which survive as earthworks, including medieval ridge and furrow ploughing and a First World War practice trench located close to the western wall of The Retreat, described below as Trench 1 (information from A Oswald).

In June 2003, eight 1m by 1m test pits were excavated within Low Moor Allotments, situated randomly across the area, as part of the 'Big Dig' project organised by the Channel 4 television series, *Time Team* (information from A Oswald). A large assemblage of material was recovered from the test pits, including three struck flints, a piece of late-Roman grey ware, and large quantities of pottery dating from the later medieval period to the 19th century. The pottery fragments were almost all heavily abraded, indicative of damage caused by plough action. In the 1980s, a short-cross penny, dating to the reign of Henry III (1216 - 1272) was found on the allotments at SE 6140 5078. In 2002, the digging of foundations for a new bench adjacent to the southern boundary of The Retreat, at SE 6172 5055, unearthed a half-penny, dating to somewhere within the years 1660 to 1760. Both coins were discovered by local people and were reported during the course of the excavation. It is probable that most of this material, with the exception of the struck flints, was deposited across the area in the 'night soil' - waste collected from York which would have been used to fertilise the soil of the arable fields around the city.

Although no archaeological excavations have been carried out on Walmgate Stray itself, excavations have taken place in its immediate vicinity. Between 1847 and 1848, the Superintendent of The Retreat, Dr John Thurnam, supervised an excavation on Lamel Hill, a large circular mound, around 38m in diameter, situated just within the western wall of The Retreat (Thurnam 1849). His excavation uncovered a layer of disarticulated skeletal remains to a depth of 12ft (3.6m), which overlaid undisturbed burials. These were aligned east to west, indicative of Christian burials, and Thurnam believed that they were most likely to have been of an Anglian date (c 6th-9th century). A large Roman cremation urn was also discovered in the centre of the mound. Thurnam accounted for the disarticulation of the skeletons in the mound's upper levels by citing possible disturbance during the siege of York in 1644, at which time the Parliamentarian army set up a gun battery on Lamel Hill to bombard Walmgate Bar, the eastern gate of York. By the late 18th century Lamel Hill was being used as a windmill mound, and is depicted as such on John Lund's map of 1772 (see

Figure 4). The windmill was in a state of disrepair by 1826 (Tillot 1961, 507) and the land was bought by The Retreat in 1839 (Tuke 1844).

Excavations were undertaken in 1983 by York Archaeological Trust, immediately outside the north-western boundary of the Stray, around 50m to the west of Lamel Hill (Youngs *et al* 1984, 249). These were carried out within the grounds of Belle Vue House, a mansion dating to the 1830s (Pevsner and Neave 1995), which was demolished in the early 1980s prior to the construction of new blocks of sheltered accommodation on the site. The excavations uncovered an inhumation cemetery consisting of thirty-eight burials, orientated east to west. These burials contained iron artefacts of a form suggestive of an Anglian date, and they appear to make up the western area of the cemetery discovered by John Thurnam (see above). It is possible that the cemetery lay alongside a Roman road, the precursor of Heslington Road, which was revealed by trial excavation in the garden of 40 Belle Vue Street in 1994 (YAT 1994). This road may have crossed the northern end of the Stray, close to Lamel Hill, but no earthwork traces of it have been recognised.

An archaeological assessment was carried out by the Department of Archaeology of the University of York in 1999, on an area immediately to the east of Low Moor, prior to the construction of new university buildings. This work identified a range of features, including Roman and medieval cemeteries and early medieval barrows and burial cairns (Perring 1999).

A survey of the natural environment of Walmgate Stray was carried out in 1992, by the Yorkshire Wildlife Trust, as part of the York Green Sites Survey. This analysed the condition of the wildlife and environmental management of the Stray, and concluded that it had not been subject to the same level of agricultural improvement as the other Strays around York (Yorkshire Wildlife Trust 1992).

During Autumn 2004, members of the York and District Metal Detecting Club and the Fulford Battlefield Society carried out a metal detector survey along the eastern edge of Walmgate Stray. This uncovered six rounds of blank .303 ammunition, five drill rounds and the fins of four mortars, all likely to be of Second World War date. A variety of horseshoes of unknown date, and a piece of a plough, probably post-Second World War in date, were also discovered. Overall, however, the density of finds was very low (information from Chas Jones, Chairman of the Fulford Battle Society).

4. HISTORICAL BACKGROUND

The extent of Walmgate Stray has not remained static. Earlier land divisions may have influenced its original form, but its boundaries certainly underwent a sequence of modifications as a result of the urban expansion of York. Low Moor once formed the northern end of a much larger tract of common land, which stretched south and south-eastwards for around 3 miles, and included the commons of Fulford Moor and Tilmire (Tillot 1961, 502). Common rights had been established on the other Strays around York from at least 1250 (Tillot 1961, 498), and it is probable that rights of common pasture existed on Low Moor from around this time.

The formal definition of the present area of the Stray began with a Parliamentary Act of 1757; the Fulford Enclosure Act. This allowed for the enclosure of around 51 acres (20.5 hectares) of Low Moor, an area of "...Commons or Waste Grounds..." (transcript of Fulford Enclosure Act, York Archives). The earliest cartographic source for the Stray is a plan of the 'Walmgate Ward Stray', by John Lund in 1772 (York Central Library, Y912). This not only depicts Low Moor, but also all the areas of land over which the people of the Walmgate Ward held common rights (see Figure 4). These included small blocks of cultivated land, known as 'Half-Year Lands', over which common rights of pasture existed for a period of time after the harvest. It is possible that at this time the name 'Walmgate Ward Stray' referred to all the land over which common rights existed, and not specifically to the area of Low Moor.

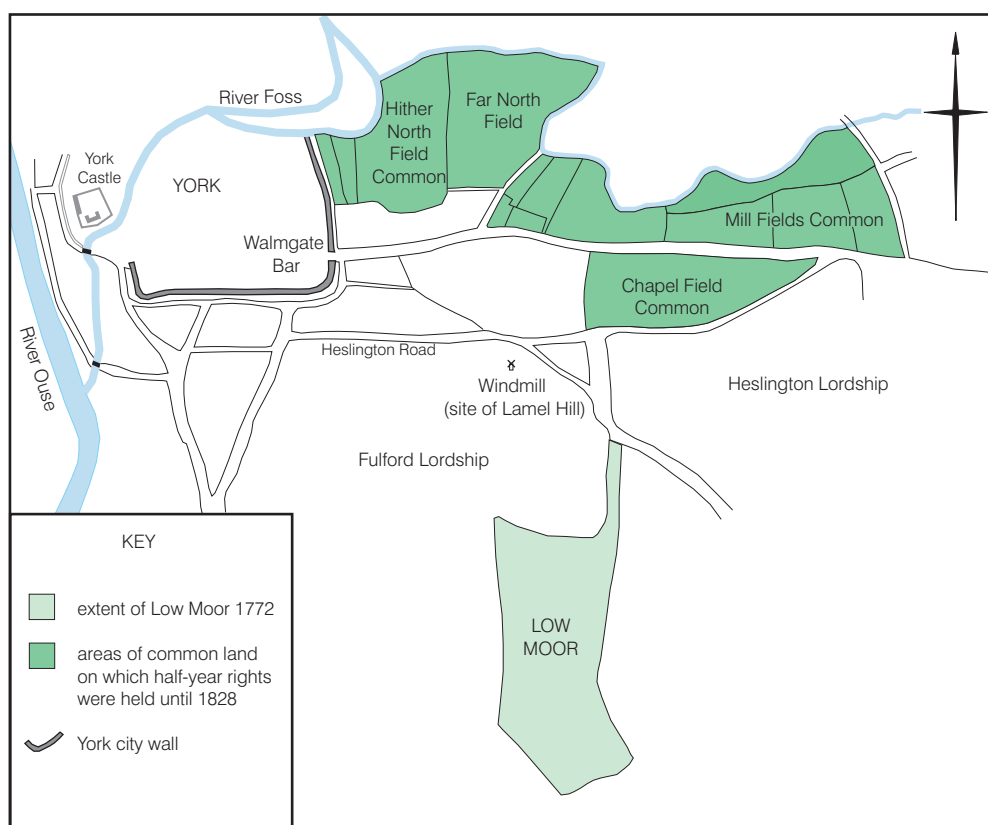


Figure 4
The common land of Walmgate Ward prior to the 1828 reorganisation.

Based on the 1772 map by John Lund.

During the first quarter of the 19th century there were moves to re-organise the pattern of land holding in Walmgate Ward. In 1828 an Act of Parliament was introduced which saw the sale of the small blocks of Half-Year Lands (Walmgate Bar, Without, Half-Year Lands Act). The proceeds of this sale were used to purchase a further four plots of land, totalling 25 acres (10 hectares), to the north-west of Low Moor, thereby creating a single area of open pasture known as Walmgate Stray (Figure 5).

The late 18th and early 19th centuries also saw major changes in the use of the land immediately surrounding the Stray (see Figure 5), with agricultural land being turned over to urban development as York expanded. In 1793, 12 acres (5 hectares) of land to the north of Low Moor were purchased for the site of a psychiatric hospital, called The Retreat. This was established by William Tuke, a wealthy Quaker merchant, and opened in 1796. Its buildings were continuously upgraded and expanded throughout the first half of the 19th century as The Retreat's popularity increased (Tillot 1961, 471). In 1839, a further 10 acres (4 hectares) of land were purchased to the west of the original site, including Lamel Hill. In 1795/6, an area of land adjoining the present western boundary of the Stray was used for the construction of a new cavalry barracks. By 1880, an infantry barracks had been added to the south of this, and the presence of the army was to have a large influence on the use of Walmgate Stray over the following 65 years (see Section 5.2). Indeed, it is still used for casual training by the military up to the present day. To the north-west of the Stray, York Cemetery was established in 1837, and expanded to its south and west in 1868 through the purchase of two blocks of land adjoining the Stray (Murray 1988).

The fields to the east of the Stray remained in cultivation until the early 1960s, when this area was heavily landscaped and a large lake constructed, to form the campus of the newly established University of York.

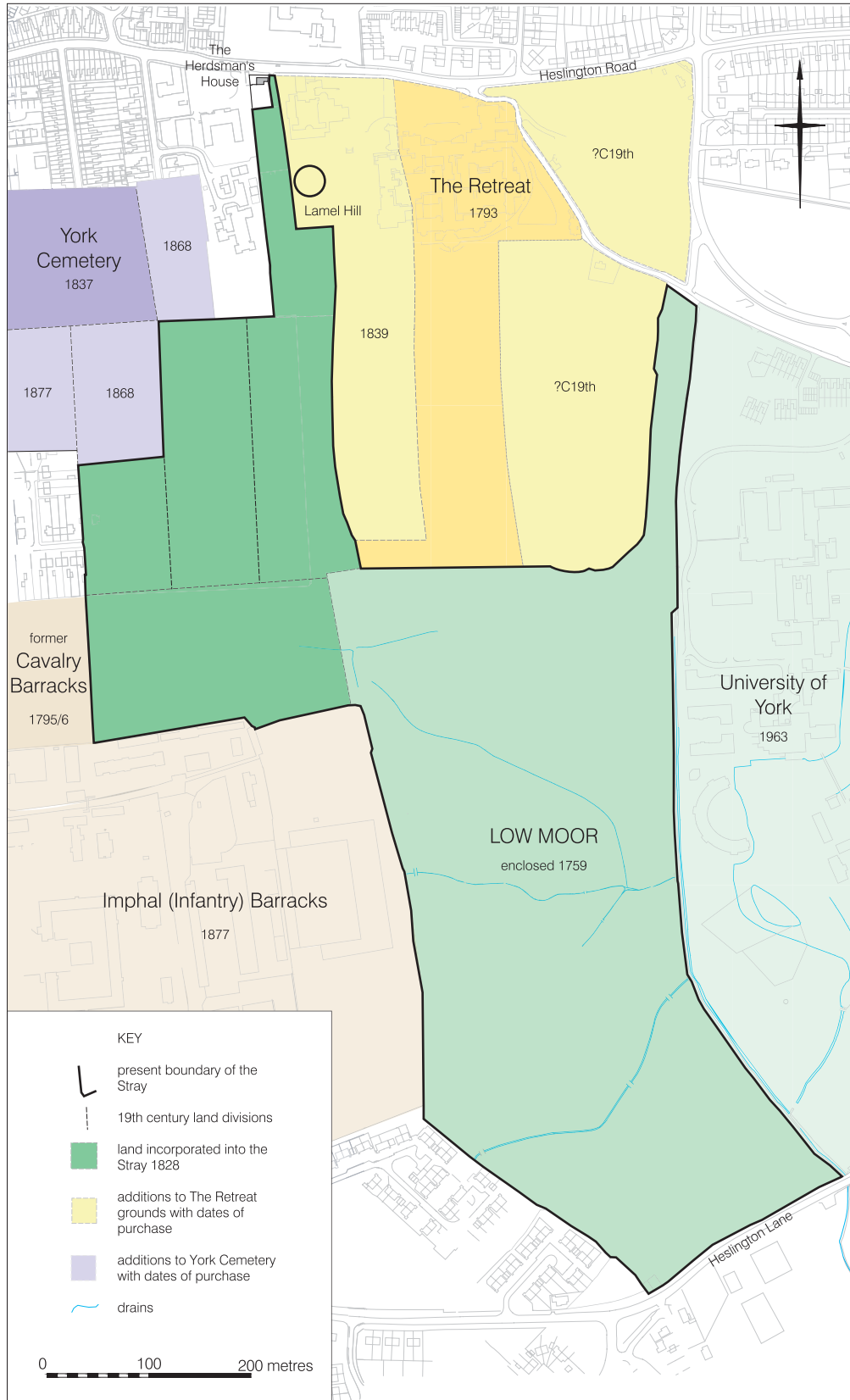


Figure 5
The development of the landscape around Walmgate Stray.

*Based on Ordnance Survey mapping.
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5. DESCRIPTION AND INTERPRETATION

5.1 Pastoral and Agricultural Activity

5.1.1 Livestock Management

Low Moor has probably been open pasture since at least the 13th century, but the very nature of pastoral agriculture generally leaves few archaeological remains on the ground. However, a number of features survive on Walmgate Stray that provide indirect evidence for the management of livestock.

5.1.1.1 Ponds

The remains of two artificial ponds survive on Walmgate Stray, presumably constructed to provide a source of water for the livestock that were kept here.

Pond A (see Figures 6 and 10), was located against the south-west corner of The Retreat boundary. It is shown on the Ordnance Survey First Edition 6-inch scale map, surveyed in 1846-1851 and appears to have held water until the late-1930s (Ordnance Survey 1853 and 1938). It survives on the ground as a sub-rectangular depression, 18m by 13m, to a depth of around 1m.

Pond B, was situated in the north-eastern corner of Low Moor, at the bottom of the strip of land running along the eastern boundary of The Retreat (see Figure 6). The pond was in existence by 1798, when it is first depicted on John Tuke's map as a rectangular pond (Tuke 1798). It also appears on the Ordnance Survey First Edition 6-inch scale map of 1853 as roughly square in shape. Its regular plan suggests that it had been deliberately constructed, presumably to supply water to the cattle on the pasture. By the late 19th century it was depicted as having a sub-circular shape (Ordnance Survey 1893), perhaps indicating that it had been re-cut by this time. It is now partially covered by the embankment built to carry the modern cycle path, although standing water still regularly collects in the area.

5.1.1.2 The 'Herdsman's House'

The Herdsman's House is situated next to the northern entrance to the Stray, on Heslington Road. It is depicted on the Ordnance Survey First Edition 6-inch scale map of 1853, and it may have been constructed to serve the new northern entrance to the Stray, after the acquisition of the additional parcels of land in this area in 1828 (see Section 4), however, it has been suggested that it dates to the 1840s (Pevsner and Neave 1995, 250). It was occupied by the herdsman, who was employed by the Freeman of Walmgate to look after the livestock on the Stray; it is currently owned by York City Council and occupied by a tenant. By the late 19th or early 20th centuries, a large notice displaying the regulations for the use of the Stray was attached to the north wall of the house, warning that 'Any Person found trespassing, damaging the herbage, gambling, cricket playing, football playing, carpet shaking on this Moor will be prosecuted by order of the Pasture Masters' (Imagine York, ref. Y_11233)

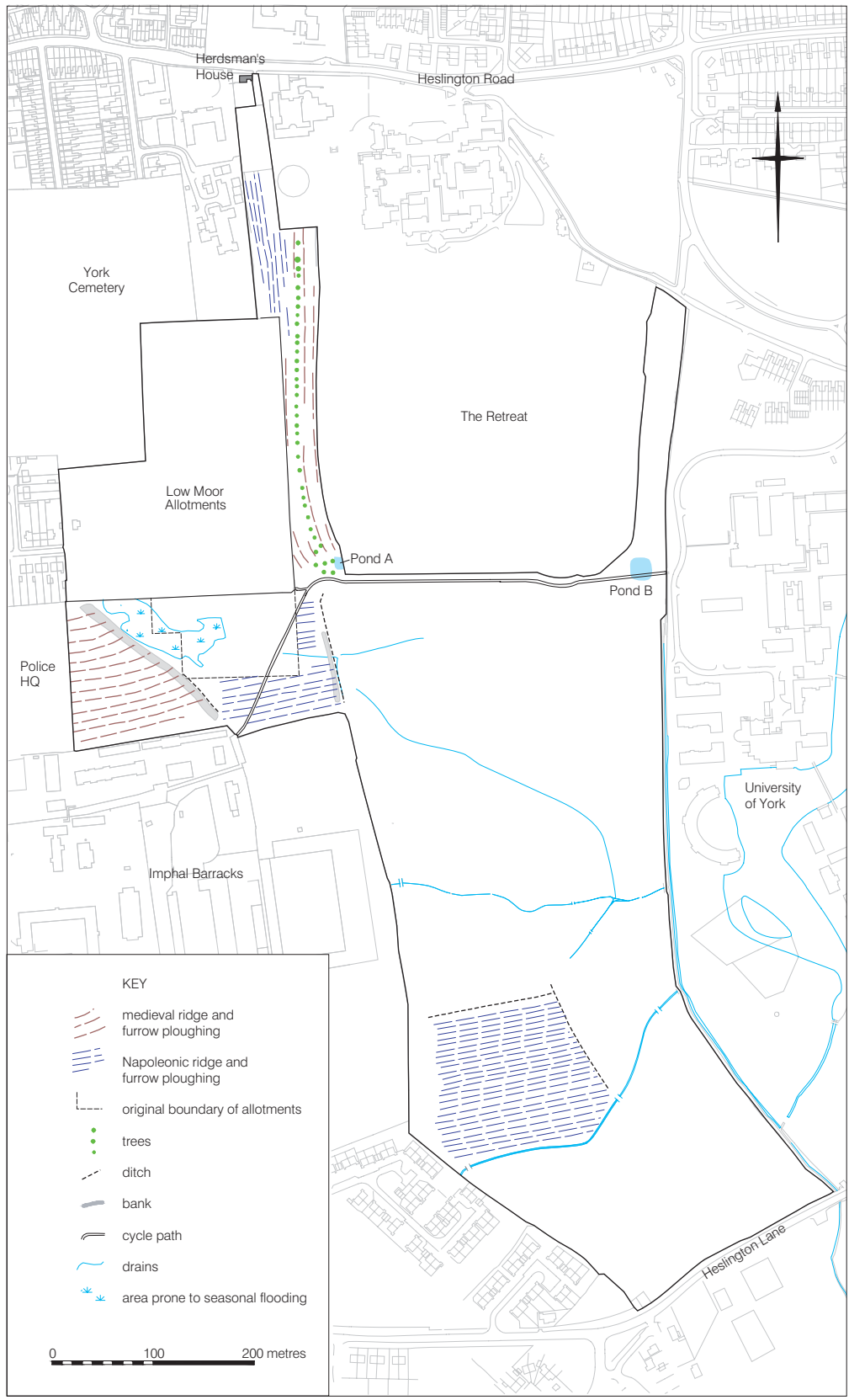


Figure 6
English Heritage
survey of
agricultural
features.

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Ordnance Survey
mapping.
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5.1.2 Medieval ploughing

Two blocks of medieval ridge and furrow ploughing have been identified in the north-west area of Walmgate Stray (see Figure 6). A number of ridges run in a north to south direction along the strip of land between The Retreat and Low Moor Allotments. These are around 10m to 12m wide, and curve eastward at their southern end, creating half of a reverse 's' pattern that is normally indicative of medieval ridge and furrow ploughing (Hall 1982). The remains of the ridges closest to the allotment fence are insubstantial, and have suffered from the construction of later military features, and erosion from an overlying pathway. However, those closer to the wall of The Retreat have survived as more prominent features. Of these, one ridge has been used as a bank for an ornamental line of trees, while the ridge closest to The Retreat wall was used as part of the circuit of a Second World War assault course (see Section 5.2.3). The line of the western wall of The Retreat follows the curve of these ridges, as do the internal boundaries within The Retreat grounds, depicted on the First Edition Ordnance Survey map (1853). This suggests that the surviving medieval ridge and furrow ploughing here was originally part of a larger tract of cultivation which continued eastward into the area now occupied by The Retreat, and also probably westward, under the present area of allotments (see Figure 7). A further block of medieval ridge and furrow ploughing has been identified on the north-western side of the Stray, between Low Moor Allotments and Impfal Barracks, with the Police Headquarters to its west. The ridges vary

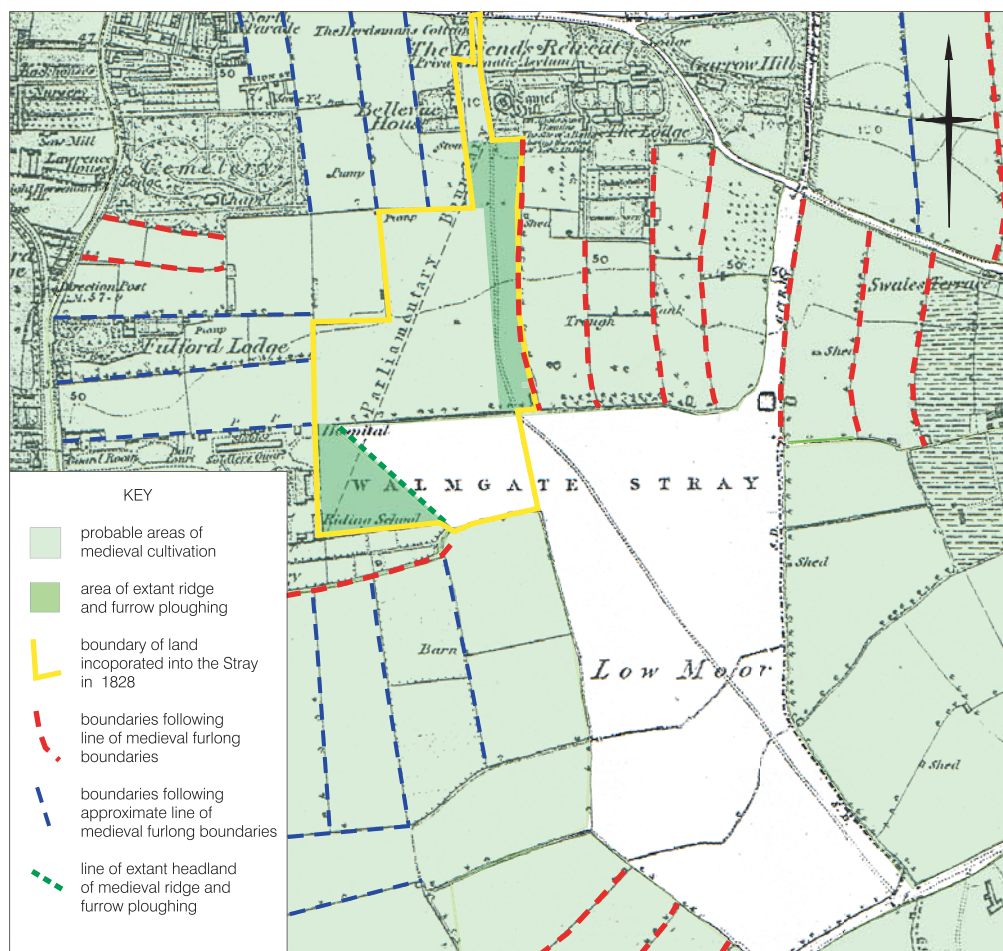


Figure 7
Plan showing
probable areas of
medieval
cultivation.

Based on the 1853
Ordnance Survey
Map

in width between 10m and 12m, and curve northwards at their eastern end, to finish at a headland consisting of a low bank about 8m wide, orientated north-west to south-east. This headland appears to respect the edge of a lower, waterlogged area to its north-east. The boundary wall of the barracks to the south of this headland has an angular kink in its course that lines up with the headland itself, which suggests that the latter may once have continued further south. An existing boundary, which follows the line of a public right of way to the south of the barracks wall, runs along the same alignment as the ridge and furrow and also has the indicative reverse 's' curve of medieval ploughing. This may be evidence of a possible larger block of medieval cultivation which extended to the south of the ridge and furrow ploughing that still survives on the Stray (see Figures 6 and 7).

The blocks of probable medieval cultivation on the Stray are restricted to the areas of the fields which were incorporated into it in 1828, and there is no evidence of medieval ploughing on Low Moor itself. The pottery recovered from the test pits on the allotments may indicate that ploughing had begun around Low Moor by the 12th century (see Section 3), and so it seems probable that Low Moor has been open pasture since at least this time, if not earlier. Indeed, the low lying, poorly drained soils of this part of the Stray would have been unfavourable to medieval cultivation, while the dryer slopes to its north would have provided more easily workable land.

5.1.3 Napoleonic ploughing

There is also evidence on the Stray of ridge and furrow ploughing which probably dates to the period of the Napoleonic wars of the early 19th century (Figure 6). This usually comprises straight furrows with the ridges between being much narrower than those of the medieval period.

The first block of this type of ploughing is located at the southern end of Low Moor, with ridges about 6m wide aligned in an east to west direction. The northern edge of the ploughing is defined by a ditch around 2m wide and 0.5m deep, and the eastern end of the ploughing is defined by another ditch, around 1m wide and 0.3m deep, which is aligned north-west to south-east.

The second block of Napoleonic ploughing lies between the north-eastern corner of the barracks wall and the south-eastern corner of Low Moor Allotments. This has been greatly disturbed by a Second World War military road-way (see Section 5.2.5), drainage ditches and a modern cycle path which runs across the area. The northernmost ridges in this block of ploughing have been truncated at their western ends due to the former presence of allotments, which originally projected south from the current area of Low Moor Allotments and went out of use in the mid-1930s (Ordnance Survey 1931 and 1938; see Section 5.1.4).

The third block of ploughing is much smaller and survives at the northern end of the strip of ground running between the western boundary of The Retreat and the eastern boundary of Low Moor Allotments. The remains of this ploughing are insubstantial, but it appears to cut across medieval plough furrows to its south-east.

5.1.4 Allotments

Council allotments, known as Low Moor Allotments, are situated in the north-western corner of Walmgate Stray. Until shortly before the outbreak of the First World War, this had been open pasture (Ordnance Survey 1910), and it is probable that the allotments were established during the course of the war, under the government's Defence of the Realm Act (DORA), (as discussed in an article in the Yorkshire Post, *Future of the York Strays*, 1920). In 1929 the allotments covered a larger area, including a section extending southward from the south-east corner of the present allotment boundary (Ordnance Survey 1931). However, by 1938, when the Ordnance Survey map was revised, this southern section had reverted back to pasture, and the present boundary had been established (Ordnance Survey 1938). The abandonment of this area of the allotments may have been due to the waterlogged nature of the ground here (see Figure 6), or to a decline in demand for allotments.

5.2 Military activity

It has been speculated that The Battle of Fulford, fought between Harald Hardrada and Earl Tostig, brother of Harold Godwinson, which preceded the Battle of Stamford Bridge in 1066, may have taken place over part of Low Moor (information from Chas Jones, Chairman of the Fulford Battle Society). However, no direct archaeological evidence for this has been discovered.

In 1644, during the English Civil War, a Parliamentarian Army under the command of Sir Thomas Fairfax, besieged York. During the siege, a gun battery was positioned on top of Lamel Hill, just outside the current northern boundary of the Stray. From here the troops were able to bombard Walmgate Bar, the eastern gate of the city. It is also possible that the flat and uncultivated ground of Low Moor provided a suitable area for the besieging army to encamp; Parliamentary troops certainly used other areas of common land around York, such as Hob Moor, for this purpose (Smith 2004, 31).

The proximity of the barracks to Walmgate Stray has led to it being used by the army, for training purposes, from at least the First World War and possibly since the 18th century. Cavalry barracks were first established between Fulford Road and the present western boundary of Walmgate Stray in 1795/6 (Anon. 1998). Infantry barracks were added on land immediately to their south, between 1877 and 1880, which were named the 'Imphal Barracks' in 1951. The infantry barracks are still in use by the army, although the cavalry barracks were demolished in the 1970s and only the boundary wall still survives. The site is now used as the Area Headquarters of the North Yorkshire Police.

Military use of the Stray has left earthwork remains on the ground which are associated with First and Second World War activities. Other evidence for military activity here is provided by artifacts, such as two military buttons that have been discovered by Roger Boddy, an allotment holder at Low Moor Allotments: one standard army button of the first half of the 20th century, and a button of the Royal Tank Regiment, dating from between 1939 and 1952 (information from Keith Matthews, Curator of Military History, York Castle Museum). Other military artefacts, such as mortar fins and gun rounds have been discovered by metal detectorists (see Section 3).

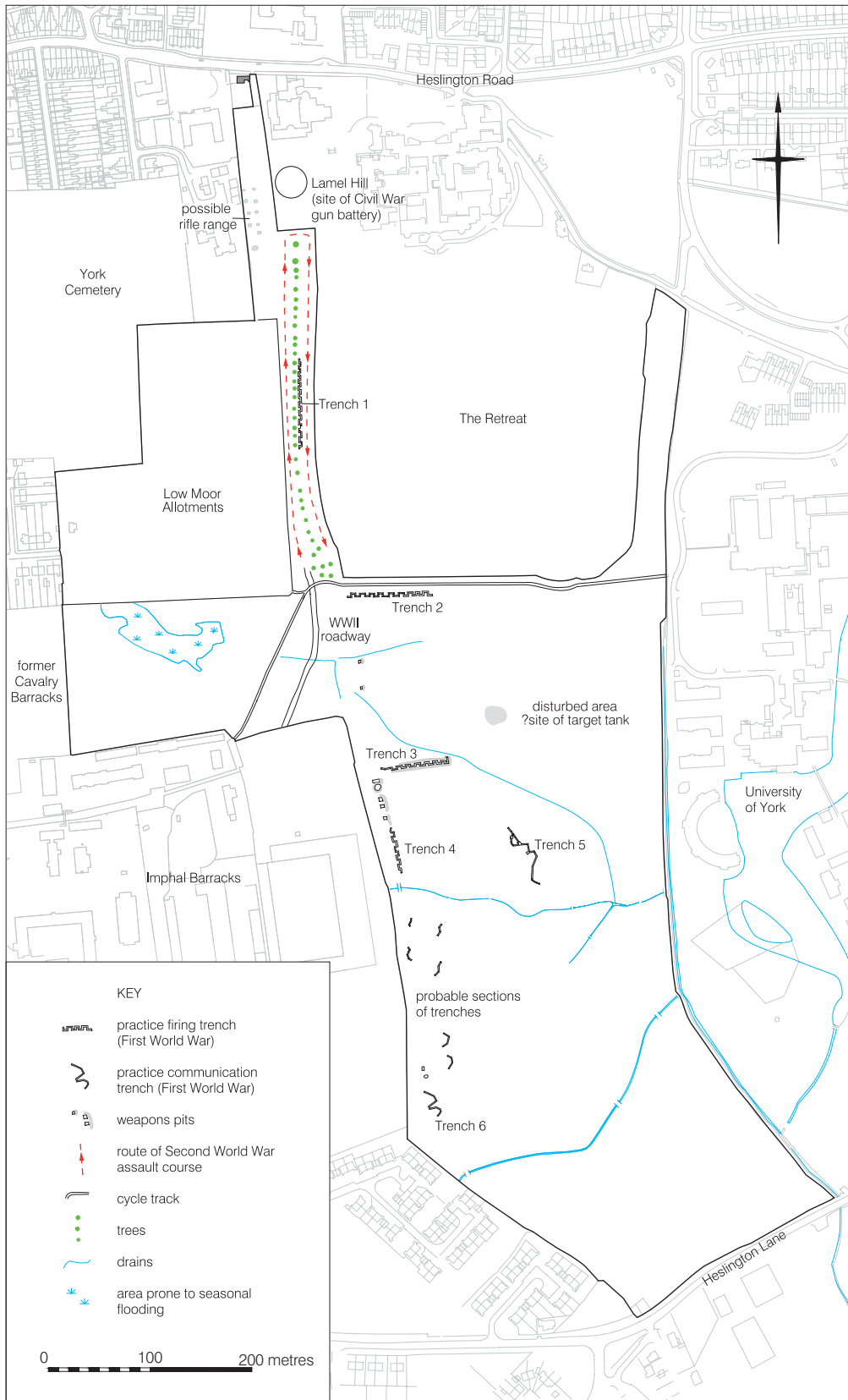


Figure 8
English Heritage
survey of military
features.

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Ordnance Survey
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5.2.1 Possible rifle range

A number of small mounds have been identified at the northern end of the strip of land running between Low Moor Allotments and The Retreat (see Figure 10). These are arranged in two parallel lines of four evenly spaced low mounds, about 3m long and 1.5m wide, which are positioned at regular 10m intervals, and aligned at right angles to the slope. A mound of similar proportions lies 6m to the south of the eastern line of mounds, and another mound about 5.5m long and 4m wide, is situated 20m down slope of the western line, although slightly out of alignment to it. The regular arrangement of these mounds suggests a military construction, and they are possibly the remains of targets for a rifle range. They are difficult to date but it is possible that they are connected with the military training activities that occurred on the Stray during the First and Second World Wars. Alternatively, they may date to the late 19th century when the army barracks was first constructed. These mounds are clearly no earlier than the 19th century as they overlie the Napoleonic ploughing in this area (see Section 5.1.3). Their relationship to this ploughing suggests that the furrows were still prominent features when the mounds were constructed, as the latter are positioned along the lines of the furrows.

5.2.2 First World War practice trenches

During the course of the First World War, Walmgate Stray, like many other public open spaces, was utilised by the army as a training area, providing soldiers with experience of digging trench lines and possibly of combat within them. The remains of four lines of practice trenches, all front line 'firing trenches', have been identified spread out across the Stray (see Figures 8 and 9): Trench 1 lies in the strip of ground running between The Retreat and Low Moor Allotments (see Figure 10); Trenches 2 – 4 are located in the northern and central parts of Low Moor. They are all positioned close to the edge of the Stray, with Trenches 1, 2 and 4 parallel to its boundary. A line of five pits is located just to the north of Trench 4, and these may also be the remains of some form of military practice works (see Figure 8). The fact that they are laid out along the same alignment, and very close to Trench 4, suggests that the trench and pits are contemporary in date. Trench 3 faces Trench 2, 160m to the north, with an open area of flat ground between them. It is possible that they were positioned so that battle training could take place between them. Trenches 1-4 all have a standard form of construction and have a plan indicative of front-line firing trenches. Each consists of a 0.9m (3ft) wide trench laid out in a *cremaillere* (crenellated) pattern, which forms rectangular bays in the trench of around 5m (16ft) long (War Office 1911, Plate 9). These trenches survive on the surface to a depth of around 0.2m, and it is likely that they were backfilled soon after they went out of use. The longest of these trenches, Trench 1, comprises eleven bays while the shortest trench, Trench 4, has only four bays (see Figure 9). The crenellated pattern was designed to minimise the line of fire along the trench if assaulted by the enemy and to prevent the spread of damage caused by explosions from incoming shells. This pattern was also designed to allow the trench to be retaken more easily through close quarters fighting (Thomas 2001).



Figure 9
*Photograph of
Trench 4 looking
south.*

Two further lengths of practice trenches have also been identified (Trenches 5 and 6), in the centre of the Stray, and close to its south-west corner (see Figure 8). Although these are the same width as the firing trenches, around 0.9m, they are laid out in an irregular zigzag pattern and are similar in form to communication trenches, which would have connected the front-line firing trenches with the rear lines (War Office 1911, 29 and Plate 16). In the centre of the line of Trench 5, a large rectangular pit, 3.5m (11.5ft) by 2m (8ft), has been identified. This may have been used as a dressing station or as an area for the wounded to wait in order to prevent the trench becoming blocked (War Office 1911, 31). A straight trench connects to the northern end of the main zigzag section, and where they meet two further rectangular pits have been dug, perhaps serving a similar function to the one described above. Smaller lengths of zigzag trenches have also been identified to the south of Trench 4, (see Figure 8) and in the south-western corner of the Stray. These may have always been discontinuous features but it is also possible that they are the remains of larger trench systems which are no longer fully visible on the surface.

To the south of Heslington Lane, on land now occupied by Fulford Golf Club's practice green, is a more extensive, but less well preserved, trench system, comprising lengths of firing trenches inter-connected by lines of communications trenches. These must have remained open after the end of the First World War, as an elderly local resident, Mary McCauley, recalled playing in the trenches in the early 1920s. However, this trench system has not been surveyed by English Heritage.

5.2.3 Second World War assault course

During the Second World War, a military assault course was constructed on the strip of land between The Retreat and Low Moor Allotments (Figure 10). This was in use until the end of the war and during the immediate post-war years, reportedly for training troops who had failed their basic training on grounds of poor fitness. Today the assault course survives as a sequence of earthwork banks and ditches. The interpretation of this area, and individual features of the course, has been greatly aided by the help of Mr Roger Boddy, whose father had an allotment at Low Moor, and remembered the assault course when it was in use.

The course was laid out in a circuit on either side of a line of trees, probably planted in the 1920s (see Section 5.3.1). Starting at the bottom of the slope it progressed northward up the hill, over a series of obstacles, turning at The Retreat wall and heading south, back down the slope and finishing close to the south-west corner of The Retreat. The downward section of the course has been constructed directly over a medieval plough ridge (see Section 5.1.2). The obstacles consisted largely of jumps of various types, the smallest of which were simply rectangular or circular pits with a small bank adjoining. Larger jumps were constructed by enclosing a sunken area within four banks, of which the one in front of or behind the sunken area was the largest, designed to hold back water or mud.

The up-slope section of the course began with a number of small jumps which survive as circular and rectangular pits, about 2.5m to 4m wide. A rope bridge was constructed between two of the trees which ran down the centre of the course, although its exact position is unknown. To the north of these obstacles were three wide rising steps formed by earthen mounds. Two larger obstacles follow, of uncertain function, consisting of low banks approximately 3.5m wide, which were probably some form of jumps. After these there was a rope swing, the remains of which consist of a single mound with a shallow rectangular pit running across its centre. Some 30m further north is a long sub-rectangular feature, defined by a shallow ditch around 2.5m wide and 0.2m deep. The function of this is unclear, but it seems certain to have formed another element of the assault course due to its alignment with the other obstacles. The course continued northwards, up to the east to west section of The Retreat wall, where, following a 90 degree turn, a large jump marked the beginning of the downward section of the course. This was followed by a sequence of five sub-circular pits, around 2m wide, which would have contained up-ended logs to jump between. To the south of this, two parallel banks survive, 1m wide and 6m long. These are aligned in a north to south direction, and supported railway sleepers over which the troops ran. Down slope from this are two parallel zigzag trenches, about 1m wide and surviving to a depth of around 0.1m. Two low banks survive either side of these which originally supported a frame covered in barbed wire, under which troops had to crawl. The next obstacle was an unstable 'bridge', formed by boards suspended by chains attached to timber uprights. This was followed directly by a wall constructed of corrugated iron sheets on a timber frame, that stood to the height of around 6ft (1.8m). This survives only as a low bank, 1m wide and 6m long, with a shallow ditch on its northern side, perhaps the footings of the wall itself. Further down slope, a small circular depression is followed by a large mound, with a semi-circular bank enclosing an area on its down-slope side, which has been identified as a water jump. Another large

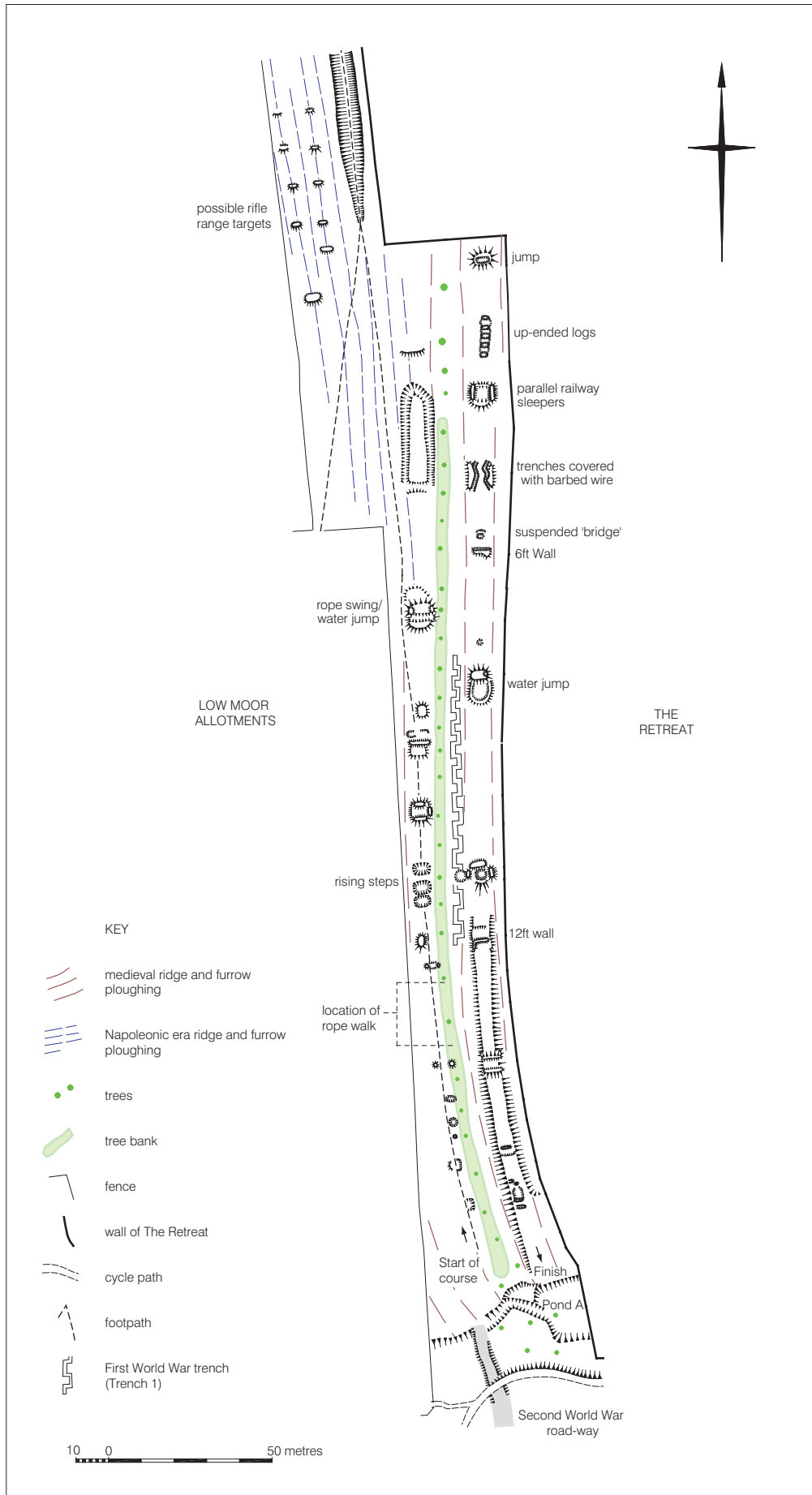


Figure 10
 English Heritage
 survey of the
 Second World War
 assault course.
 (reduced from the
 1:1 000 scale
 survey)

jump is situated 45m to the south, consisting of three low banks around a central rectangular hollow. This feature cuts across the line of an earlier First World War practice trench (Trench 1) on its western side. Beyond it is a bank, 1m wide and approximately 6m long, which originally supported a 12ft (3.6m) high corrugated iron wall. Down slope from this there were a series of small jumps, surviving as low 1m wide banks, before the course finished close to the south-west corner of The Retreat.

5.2.4 Second World War weapons pits

A number of small rectangular pits, between 1.5m to 3m wide, have been recorded across Walmgate Stray. Some of these are fronted or surrounded by low banks, which are probably formed by up cast soil from the pits. The function and date of these features is not certain, but many could be of military origin. Two pits in the centre of the Stray may have been used as firing positions, from which to fire anti-tank rifle grenades at a tank hulk, which local residents recall was positioned as a target in the centre of Low Moor during the Second World War. This tank hulk is rumoured to have been buried *in situ* at the end of the war. This, or the impact of the grenades, may account for a patch of heavily disturbed and partially raised ground identified by the field survey (see Figure 8).

5.2.5 Second World War road-way

An embanked road-way, surfaced with timber railway sleepers which are still visible in places on the surface, runs from the north-eastern edge of the Imphal Barracks to the bottom of the strip of land between Low Moor Allotments and The Retreat, the location of the assault course (see Section 5.2.3). The road-way is visible on the ground as a low bank, about 5m wide. It appears newly constructed on aerial photographs taken in April 1942 so probably dates to the early years of the Second World War (RAF 1942). Local residents recall that during the war vehicles from the barracks were often hidden under the tree lines along the boundary of the Stray, between the allotments and The Retreat, to prevent them being targeted by enemy bombers. Such a road-way would have been required to allow vehicles to move rapidly from the barracks, across this boggy and waterlogged part of the Stray, to the cover of the trees.

5.3 Miscellaneous features

5.3.1 Ornamental tree line

An ornamental line of trees, orientated north to south, extends along the centre of the strip of ground between Low Moor Allotments and the western wall of The Retreat (see Figure 6). The line of trees has been planted on top of a prominent ridge of medieval ploughing that survives in this area, and the planting follows the curve of the ridge (see Section 5.1.2 and Figure 10). The trees are first depicted on the 1931 Ordnance Survey map (revised 1929), and it is likely that they were planted during the 1920s. The tree line is not depicted on the 1910 Ordnance Survey map (revised 1907), and it would seem unlikely that the First World War practice trench (Trench 1), which sits close to its centre, would have been constructed under trees, so a post-1918 origin seems most likely. Indeed, the immediate post-First World War period was a time when the use and functions of the common lands around York were under debate (Yorkshire Post 1920), and there were moves to allow the Strays to be

used as a recreational resource, as well as for pasture. The planting of an ornamental line of trees could therefore be seen as an attempt to beautify this part of the Stray and create a more parkland feel to the landscape.

5.3.2 Sporting activities

Walmgate Stray has been used as an informal area for sports since at least the beginning of the 20th century. Indeed, the fact that by this time a notice was put up on the wall of the Herdsman's House forbidding both the playing of football and cricket, indicates that such activities may have been common on the Stray (see Section 5.1.1.2). By the 1950s the playing of football on the Stray had been formalised, with three football pitches laid out in different locations (RAF 1958). Former railway carriages were positioned adjacent to the pitches to provide basic changing facilities (York Group for the Promotion of Planning 1968). One football pitch still exists in the south-east corner of the Stray.

5.3.3 Quarrying

The remains of a small quarry, about 30m long and 20m wide, survive in the north-eastern corner of the Stray, close to the eastern boundary of The Retreat. This would probably have been used for the small scale extraction of gravel. This quarrying is not depicted on any of the available cartographic sources, and the lack of relationships to other features on the surface makes it difficult to date. However, the quarrying appears to respect the eastern boundary of The Retreat, and is therefore limited to the area of Low Moor. Indeed, small scale quarrying is a feature of many areas of common pasture, such as at Hob Moor in York, where clay was extracted for the production of bricks from at least the mid-19th century (Smith 2004), or at Westwood Common outside Beverley, in the East Riding of Yorkshire, where limestone was quarried from the late 14th century (Pearson and Pollington forthcoming).

6. SUMMARY

Low Moor originally formed the northern end of a tract of ancient common land that extended for about three miles to the south-east of York. Like many other commons, the date of its establishment is uncertain, but an origin no later than the 12th or 13th centuries, and perhaps several centuries earlier, seems likely. In the mid-18th century Low Moor was formally enclosed, creating a smaller area of pasture over which the people of Walmgate Ward held common rights. By 1828 the area of Walmgate Stray was expanded, with additions of land on its north-western side as part of a wider re-organisation of the land holding within the Walmgate Ward. Smaller parcels of land over which common rights had been held were sold off, and the proceeds used to purchase land adjoining Low Moor, creating a single block of common pasture.

The difference between the area of Walmgate Stray that had originally been part of the ancient common land, Low Moor, and the 19th century additions, is reflected in the type of archaeological remains found in the two areas. The earliest datable earthwork remains on Low Moor is a tract of Napoleonic era ridge and furrow ploughing, dating to between the late 18th and the early 19th centuries. This almost certainly reflects the fact that the principal use of Low Moor, until this time, was common pasture. Where physical evidence of earlier cultivation is found, it is restricted to the areas of land added in 1828, and cartographic evidence suggests that Low Moor was surrounded by medieval open fields. This is a pattern which is also found on Hob Moor and The Knavesmire, to the south-west of York (Smith 2004).

Although it is probable that Low Moor had been used largely as pasture since the medieval period, little physical evidence survives on the ground to attest to the prolonged management of livestock. Only the remains of two ponds, which would have provided water for the livestock, survive. Like York's largest common, The Knavesmire, the low lying ground of the Stray is prone to seasonal flooding, that would presumably have been worse prior to the construction of artificial drainage. As marginal land its use as common pasture, rather than for cultivation, was perhaps predictable.

The army barracks, adjacent to the western boundary of the Stray, has been an important factor in its use. Barracks have existed close to the Stray since the late 18th century, and it is possible that the proximity of a large area of open ground, which could have been used for training, may have even been a factor in the decision to establish barracks here. However, it is probable that there was also military activity pre-dating the establishment of the barracks, particularly during the Civil War. The earliest direct physical evidence for military use of the Stray dates from the First World War, in the form of four practice firing trenches and section of practice communication trenches which survive on the Stray. It is also likely that Low Moor Allotments were established as a consequence of the First World War, during which allotments were laid out on many parks and commons, just as the Napoleonic ploughing on Low Moor reflects the food shortage caused by that conflict.

Walmgate Stray also contains the earthwork remains of military features dating to the Second World War. Of these the most unusual are the earthworks of an army assault course, which are apparently unique in the archaeological record.

The Stray has also been used for a number of other functions, such as quarrying, as well as recreational activities including football and cricket. The planting of an ornamental line of trees, probably during the 1920s, also saw the Stray take a step towards its current primary function; that of recreational amenity land.

7. METHODOLOGY

The archaeological fieldwork was undertaken by Mitchell Pollington and Alastair Oswald. The survey was carried out using graphical techniques at a scale of 1:1 000 on the area between The Retreat and the Low Moor Allotments, and at 1:1 250 on the other features across Low Moor. The plan of the archaeological features was fixed to the Ordnance Survey 1:1 250 map base using surrounding property boundaries. Further military features and ploughing was recorded using a Trimble dual frequency Global Positioning System (GPS) with two rover receivers (Trimble 4800 and 5800 models) working in real-time kinematic mode.

The report was researched and written by Mitchell Pollington. Illustrations were prepared by Mitchell Pollington with advice from Philip Sinton and Alastair Oswald. Six ground photographs were taken by Bob Skingle and have been deposited in the National Monuments Record at Swindon. The report was commented on by Alastair Oswald and Trevor Pearson, and edited by Christopher Dunn, Senior Investigator, Archaeological Investigation Team, York.

8. ACKNOWLEDGEMENTS

English Heritage is grateful to Mr Roger Boddy who provided information on the Second World War features of Walmgate Stray, to Keith Matthews, of York Castle Museum, for dating the military finds, to Chas Jones for information of the Battle of Fulford and to Carl Camp, a local resident who assisted with fieldwork over the course of two afternoons. English Heritage would also like to thank the staff of York City Archives and the York Central Library who provided useful background information and assistance with the documentary research.

Some of the plans in this report contain Ordnance Survey data and are reproduced with their permission under licence number GD03085G.

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APPENDIX 1

Table of National Monuments Record (NMR) numbers linked to the site:

Name	NMR no.	NGR
WALMGATE STRAY	SE 65 SW 500	SE 617 502
Medieval ridge and furrow	SE 65 SW 504	SE 6128 5045
	SE 65 SW 505	SE 6145 5065
Napoleonic ridge and furrow	SE 65 SW 501	SE 6166 5005
	SE 65 SW 502	SE 6145 5045
	SE 65 SW 503	SE 6140 5090
Lamel Hill	SE 65 SW 525	SE 6144 5094
Quarry	SE 65 SW 522	SE 6180 5078
Pond A	SE 65 SW 518	SE 6148 5056
Pond B	SE 65 SW 519	SE 6178 5056
Firing targets	SE 65 SW 506	SE 6141 5088
Trench 1	SE 65 SW 507	SE 6145 5073
Trench 2	SE 65 SW 508	SE 6154 5054
Trench 3	SE 65 SW 509	SE 6156 5037
Trench 4	SE 65 SW 510	SE 6154 5029
Trench 5	SE 65 SW 511	SE 6167 5029
Trench 6	SE 65 SW 523	SE 6157 5003
Trench sections	SE 65 SW 512	SE 6157 5020
Weapons pits	SE 65 SW 513	SE 6125 5047
	SE 65 SW 514	SE 6151 5046
	SE 65 SW 515	SE 6153 5034
Second World War road-way	SE 65 SW 517	SE 6146 5048
Possible area of target tank	SE 65 SW 516	SE 6164 5042
Assault course	SE 65 SW 524	SE 6146 5059 – SE 6144 5088
Low Moor Allotments	SE 65 SW 525	SE 6135 5065
Ornamental tree line	SE 65 SW 521	SE 6146 5059- SE 6144 5088



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