

*The past beneath our feet:*  
***the communities of  
Heslington East***

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The professional photographs on pages 5, 13 and the back cover were taken by Ian Martindale. Cover image © Darren Kelham.





On the site of the new University campus at Heslington East, a programme of archaeological work has been taking place to try and understand what life was like here in the past. Acting on behalf of the University of York, which owns the land, teams of archaeologists from York Archaeological Trust (YAT), On-Site Archaeology (OSA) and the University's Department of Archaeology have been investigating what might have happened in the time before the land was used for modern farming. The combined efforts of the University researchers, commercial archaeologists, students and community volunteers have been directed at understanding this piece of landscape in

the Vale of York. There have been fewer archaeological investigations undertaken in the Vale than in the surrounding uplands, and also less than in the city of York. The low-lying central part of the Vale in particular is poorly understood, with many archaeological remains obscured because they have been covered by deposits of sands, silts and clays.

The development permitted at Heslington East, on a greenfield site, covers a large area. This has provided the opportunity to investigate the archaeology in large, open landscapes, rather than the small explorations so often seen in towns or the narrow strips of pipeline developments seen in the countryside.

The specialist work being undertaken on the collections of material gathered from the site is continuing today and, when this is complete, a book about the results will be produced by the University. This booklet, funded by a Heritage Lottery Fund grant, allows us to share some of the initial findings and the unexpected discoveries from the site. These relate to the types of structures that were built, the way people lived and the changes that occurred over time. They also include a range of human remains found at various locations on the site, from the prehistoric through to the Roman period.

To read more about the general history of the Vale of York see Mark Whyman and Andy Howard's 2005 publication *Landscape and Archaeology in the Vale of York* (currently available online <http://www.yorkarchaeology.co.uk/resources/voy-web.pdf>)

Mesolithic period  
(middle stone age)

9500 - 4000 BC

Neolithic period  
(new stone age)

4000 - 2200 BC

Bronze Age

2200 - 700 BC

Iron Age

700 BC -  
1st century AD

Roman period

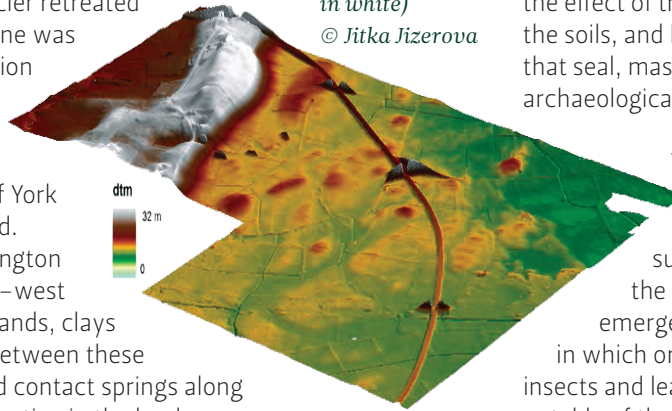
AD 43 - 410  
York founded AD71

Early medieval period

5th to 11th centuries AD (including Anglo-Saxon,  
Anglo-Scandinavian and Anglo-Norman periods)

## Shaping the Vale of York

About 14,000 years ago the Vale of York was filled by a glacier moving southwards, producing a large lake of meltwater in the south of the region. When the glacier stopped close to modern-day Esrick, it created a distinctive ridge, thus it is known as the Esrick moraine. As the glacier retreated to the north, another moraine was deposited close to the location of modern York. This produced a second ridge of higher land, forming a routeway across the Vale of York during the prehistoric period. Kimberlow Hill, on the Heslington East site, is part of this east-west York moraine, comprising sands, clays and gravels. The interface between these different deposits generated contact springs along the hill-side, many are still active in the landscape today and feed into the Heslington East lake.

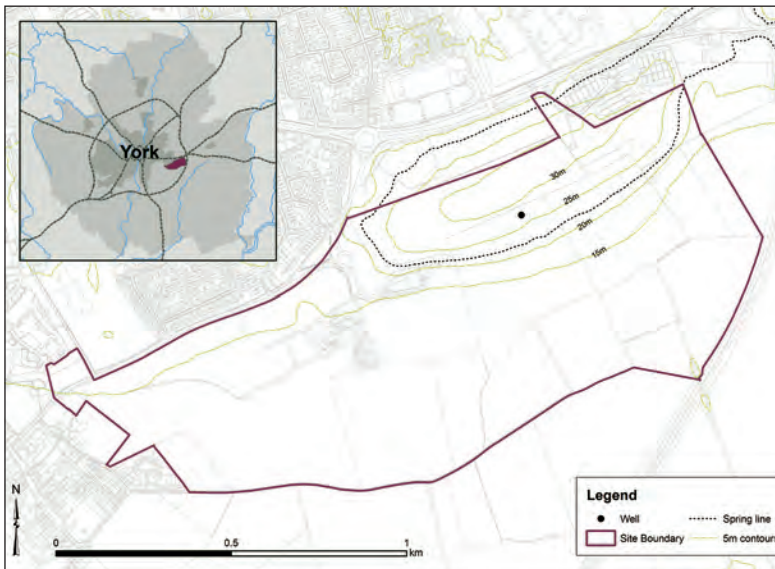


*An elevation model of the York moraine looking north-east across Kimberlow Hill (shown in white)*

© Jitka Jizerova

The erosion of sands from the glacial lake-bed around York, during a period of cold dry weather from about 11,000 years ago, resulted in some localised sand-dune formation, most clearly seen in areas around Strensall and Skipwith. These types of landscape process are also visible on a small scale at Heslington East. The underlying drift geology, the weather and the effect of the hill-slope combined have eroded the soils, and hill-wash deposits have been formed that seal, mask and, in some cases, protect the archaeological features on Kimberlow Hill.

The site has been ploughed for many centuries so many archaeological features have been cut away and only survive today as faint traces. However, the parts of the site where the springs emerge have remained wet creating conditions in which organic materials, such as wood, plants, insects and leather, have been preserved. The most notable of these items is the brain matter within a human skull, which was recovered from a water-hole to the west of the site in 2008. This has been dated to the Iron Age period, about 2500 years ago. Analysis of the vertebrae attached to the skull indicates that, before deposition, this Iron Age man had been hung and then decapitated.



*Site location plan, also showing location of stone well discussed on pages 8 and 9 © Crown Copyright/database right 2013. An Ordnance Survey/EDINA supplied service.*



*The Iron Age brain material being assessed by a specialist*  
© Sonia O'Connor

## Early activity

Although rivers have been a significant influence on human activity and settlement across the Vale of York, the site at Heslington East has an independent water source in the form of the contact springs, mentioned earlier. Emerging where bands of sand and clay meet, they have created a mosaic of habitats, attracting wildlife as well as people and their domestic animals. The use of this resource in the Heslington landscape has varied considerably over time. Mesolithic ('middle stone age') flints from a pit near a hill-side spring suggest that this spring was first used between 11,500 and 6000 years ago. For this time period, however, there is little other evidence of human settlement because people were moving through the landscape and living in seasonal camps: traces of short-lived activities are difficult to identify. Some 'new stone age' features have been identified on the site but seem to be isolated pits; understanding the broader context of this Neolithic activity will require further analysis.



*Bronze Age logs used as a well lining*  
© OSA



*Bronze Age cobbles* © OSA

In the period from 4300 years ago, a change in technology from stone to metal heralded what we describe as the Bronze Age. Important social changes are witnessed for this period, for example a move towards more individualised burial rites. Bronze Age features at Heslington East suggest more concerted water management of the spring line, starting around 3500 years ago. This involved using hollowed-out logs in separate locations across the site to maintain water-flow through the sandy soil, forming an early type of well. At the same time, areas of cobbling provided a platform for access around the springs. An extensive hollow from this period, filled with organic sediments, suggests that people used the springs at Heslington East to water their livestock.



*Large Bronze Age pit with dark organic deposits* © OSA

## Cremations

While the main Bronze Age activity seems to be focused on the use of water around the spring line, other evidence implies further activity, and possibly settlement, in the immediate area. A

*Bronze Age arrowhead*



barbed and tanged flint arrowhead, characteristic of the period, was found during fieldwalking, and three Bronze Age cremations, two in urns, have been recovered from the site. The Heslington cremations were not found

beneath circular barrows, as might be expected, perhaps because any traces of overlying structures have been removed by ploughing. However, their location (towards the top of a southern facing hill-slope) makes the former presence of barrows likely. An isolated small pit contained half of a well-crafted and polished Bronze Age battle-axe. These distinctive finds provide a glimpse of the activities of people who are not well represented in the archaeology of the Vale of York.



*Cremation urn being lifted with a plaster of Paris cast*



*Bronze Age battle-axe*



*Excavation of cremation from within the urn in the laboratory*



*An unlined Iron Age well © OSA*



*A cobble- and wattle-lined well © OSA*

### **Water management**

Across the site during the Iron Age and Roman periods, the water source was managed in various ways. Some wells dug during the Iron Age appear to have been unlined and perhaps provided access to water for only a limited time. During the Roman period, however, water-flow from the springs was managed through ditch systems and wattle-lined channels, and a number of cobble- and wattle-lined wells were constructed.



*A Roman wattle-lined channel © OSA*



*Well lined with large wattles © OSA*

The final well at Heslington East, which dates to the late Roman period, was the most impressive and sophisticated. Situated towards the top of the hill, it was stone-lined and more than 4 metres deep. Rather than being filled with rubbish when it went out of use, items such as parts of deer and cattle and entire pots were deliberately placed within it. Detailed study of the well and its fills suggests six distinct episodes in the feature's development. This began with the creation of a good-quality, carefully engineered well in a new position high on the hill-side. A Roman roof finial in coarse-grained yellow sandstone was incorporated into the well lining about one metre down from its surface, breaking up the symmetry of coursed masonry. Moving an architectural feature such as this from its original height to the depths of the well must have been a deliberate act by the builders of the well.



The deposit at the base of the well relates to its final usage. This yielded several small fragments of leather along with a nearly complete bucket that would have held about 5 litres of water. The bucket was constructed from 12 individual staves made of yew, held in place by two iron hoops, and a single base of ash. A local coarse-ware jar, found just above the bucket, could also have been used to draw water from the well. The lowest deposit was covered by a quite different layer containing distinctive bones and artefacts. Above this were accumulations made in stagnant/slow-moving water, followed by the collapse of the well's stone lining, the final accumulation comprised deposits that had slumped into the top of the feature.

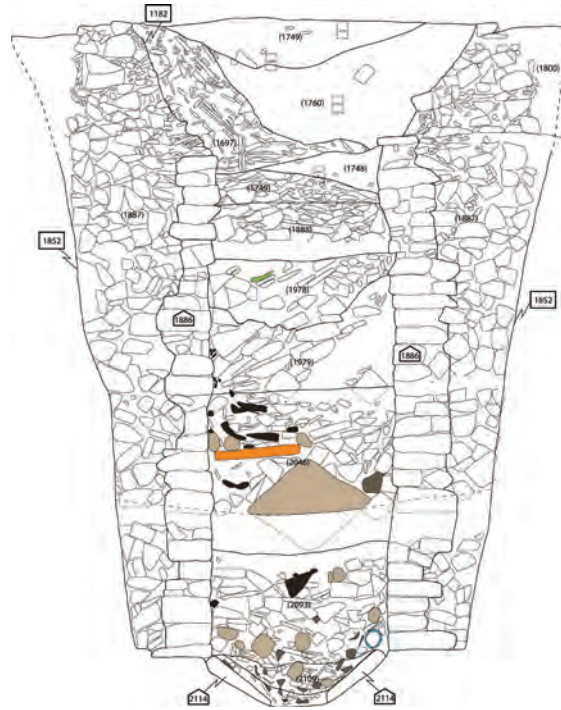


The profusion of animal bones recovered from the well was much less fragmented and eroded than the material from the site in general. The proportion of gnawed bones was also low, and burnt bones were extremely rare. The high proportion of butchered bone included a significant number of horse bones. There were a lot of bones of red deer and dog and fewer of sheep and goat than seen elsewhere on the site. The material from the well is therefore very far from being general domestic rubbish, a characteristic that is mirrored in the distinctive fills of other late Roman wells in Yorkshire, for example at Dalton Parlours and Rudston. The bones from deposits just above the final usage were especially distinctive, comprising an immature deer, an immature dog and a calf, seemingly selected for their age, alongside an adult cow and the sacrifice of a large antler, which would have been valuable raw material. These were accompanied by a large cobblestone and a complete, good-quality jar. Taken together, they suggest the symbolic 'closure' of this water source.





*The challenge of excavating a deep well*



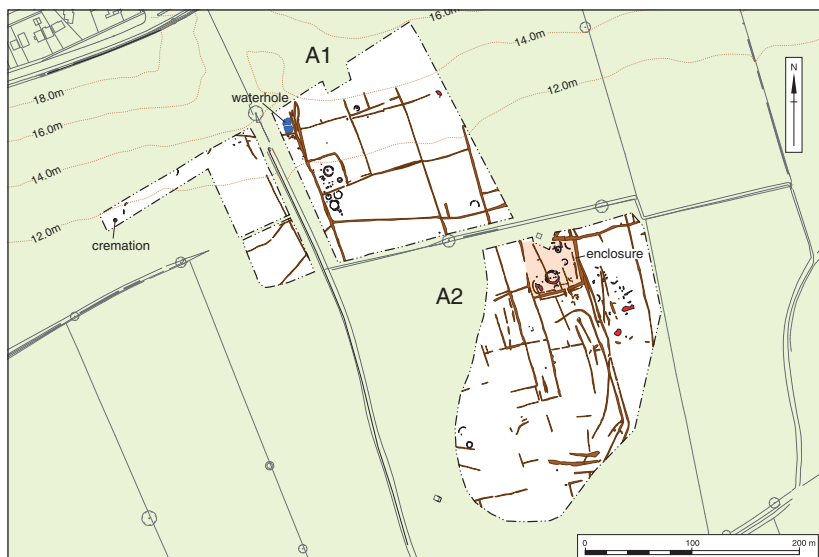
*Drawn section of the well and the deposits that filled it  
©Helen Goodchild*

*The base of the well*



*The top of the well*





Plan of the Iron Age landscape to the west of site © YAT

## The Iron Age

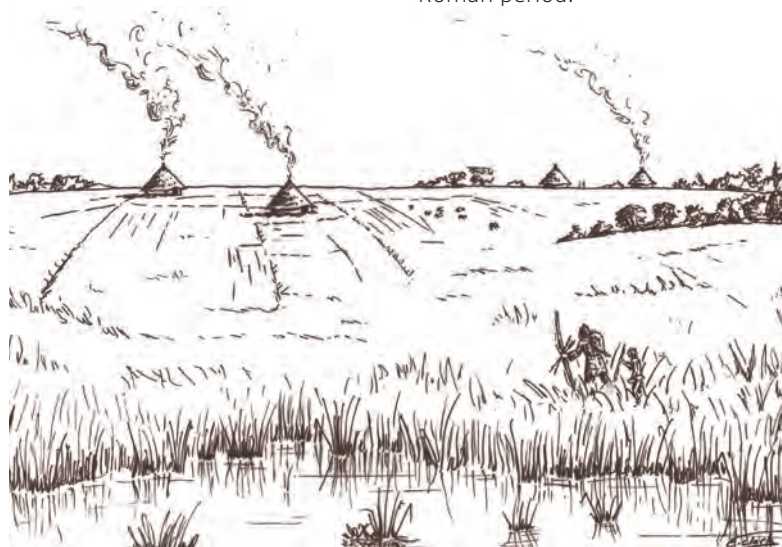
There is evidence of Iron Age human settlement on the margins of the Vale and in the surrounding uplands, but our knowledge of settlement in the central part of the Vale at this time is patchy. The best evidence comprises a sequence of enclosures and associated roundhouses at Crankley Lane, Easingwold, interpreted as being indicative of summer grazing of livestock in the Vale landscape. In addition, aerial photographic evidence for areas to the south and west of the site at Heslington suggest Iron Age field systems and possible enclosures, but this has not been tested by excavation. At Heslington East itself a series of field systems, enclosures and roundhouses can be dated to the Iron Age. These increasingly complex field boundaries are paralleled by the roundhouse enclosures towards the western edge of the site, revealing a highly organised landscape typical of Iron Age farming communities. Importantly, this system may have continued in use at Heslington into the 2nd century AD, well within the Roman period.



Roundhouse under excavation © YAT

The earliest buildings identified on the site were roundhouses, as evidenced by gullies and ditches (most of the internal features had not survived), situated in positions close to the ancient spring line. Some houses were set within ditched enclosures and rebuilt on successive occasions. A possible view is shown here from the current lake position looking north-east over Kimberlow Hill during the late Iron Age/early Roman period.

Reconstruction drawing  
© Ed Clark



## Roman occupation

When the Ninth Legion founded the Roman fortress at Eboracum (York) in the late 1st century AD, this had a significant impact on the local economy and landscape. The evidence for this is well documented for the city and important settlements of Roman date have been identified in the south of the Vale at Shiptonthorpe, Hayton and Holme-on-Spalding Moor, plus the town of Isurium Brigantum (Roman Aldborough) to the north. Evidence for Roman occupation elsewhere across the Vale, however, remains somewhat patchy.



© OSA



© OSA

Some distinctive elements at Heslington East date to the early Roman period, including features dated by well-recognised pottery types such as amphorae and Samian ware. The most compelling evidence for occupation during this period, however, comes once more from activity around the spring line. A number of substantial oak timbers were used to construct a framed structure within one spring. These timbers have been tree-ring dated (dendrochronology) and so provide quite a secure date of AD 53–89. Although timber might be felled at a certain date and reused later, it seems likely that this abundant water source was being controlled from the very start of the Roman period.



© OSA



*Masonry building looking east*

Several rectangular buildings, situated upslope from the spring line, were constructed after the roundhouses had gone out of use, set within a newly defined landscape bounded by east-west trackways and north-south ditches. The good-quality limestone foundations of one structure reveal a Romanised way of living, with remnants of an underfloor (hypocaust) heating system and associated furnace.



*Hexagonal stone roof tile*

*Ceramic tile with dog paw print © Jane McComish*

The remains of a collapsed Roman stone roof were evident nearby, the absence of later development allowing it to survive in good condition. This was made up largely of hexagonal sandstone tiles, some of which still contained the fixing nails. Other tiles from nearby included box flue tiles with decorative combed finishes and a brick with dog paw print. We can compare the size and type of the tiles with those found in Eboracum (York) to see where they might have been produced and how building construction changed over time.



*Late Roman kiln*

Finally, at the very end of the Roman period, there is evidence for specialised production in the north of the site, including some metalworking waste, crop driers and a kiln.

*Plan showing the changing use of space over time*



## A Roman way of life

Although Iron Age communities living in Britannia traded items with the Romans, it was not until after the Roman invasion that we find evidence of a distinctively Romanised way of life. At Heslington, situated close to the road from Eboracum to Petuaria (Roman Brough-on-Humber), we can recognise a number of important changes to how people lived. Some relate to movement through the landscape, for example the establishment of the cobbled tracks and ditched boundaries mentioned previously. There is also a change in the type of dwellings constructed and the materials used, including the use of stone and ceramic roofs and underfloor heating systems. At a more everyday level, however, artefacts indicate Roman ways of doing things and changing trade patterns.



*Roman coin* the cruder, local types of pottery.

Coinage was introduced in the Roman period, with most of the coins from Heslington East from the 3rd and 4th centuries AD. Also clear is the trade in fine pottery ware, some of which had been imported from France and Germany, contrasting with

The preparation and consumption of food in a Romanised way is evidenced on the site by the recovery of amphorae, used to transport and store olive oil and wine and perhaps fish sauce, and fragments of a range of mortaria, used by Romans for grinding foodstuffs, particularly herbs and spices. The presence of 'cheese squeezers' suggests that dairy products were being processed in new ways.

Lastly, changes to the personal habits of local communities can be seen, for example by the presence of a copper-alloy cosmetic spoon. This is probably part of a 'toilet set', an indication of Roman attention to personal hygiene.



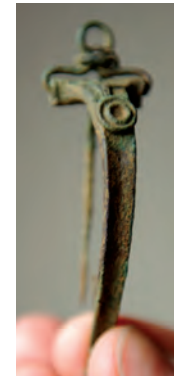
*Fragment of a mortarium*



*Imported Samian ware*  
© Fiona Harvey



*Roman brooch as found, and after conservation*



*Roman cosmetic spoon*





*Cobbled tower foundation*

A geophysical survey revealed a rectangular feature. When excavated it was found to be the cobbled foundation of a probable tower, placed beside a trackway running east-west along the hill-side. Substantial architectural blocks from the top of some other features on the site may have originally come from this tower and indicate specialised Roman building techniques, including opus quadratum, a way of coursing large blocks without the use of mortar. Beside the tower, to the east, were two burials laid out west to east. Nails had been inserted around the skull of one body, an unusual burial rite.



*Two graves excavated to the east of the tower foundation*



*Although truncated the tower shows evidence of coursing*



*Skull with nails around it*



*A disturbed Roman infant burial*



*Female skeleton formally laid out*



*Adult male skeleton found close to the masonry building*

Five Roman infants were buried on the site near the buildings, although these remains have survived poorly and had been frequently disturbed. Elsewhere, two burials were inserted beside a boundary ditch, an adult female formally laid out alongside a male of a similar age. These burials were situated towards the top of the hill, by the ditch, signifying a connection with the land and perhaps reinforcing a claim to this area.

Finally, a crouched adult male appears to have been placed in a shallow ditch just to the west of the hypocausted building described previously. Analysis of his skeleton revealed a life of physical labour and an early death caused by spinal tuberculosis. He would probably have needed care from his community in order to survive into adulthood.

## After the Romans

After Roman activity ceases on the site there was no evidence of later structures or settlement. However, a suite of distinctive objects, dated to the 5th and 6th centuries AD, seems to represent items that would be found with burials of the time. The Anglo-Saxon period, during which the nearby settlement called Eoforwic was developing, may thus be represented at Heslington East by traces of a lost cemetery on the top of Kimberlow Hill. Similar cemeteries have been found at the Mount (Heworth) and nearby at Lamel Hill (The Retreat).



*Distinctive funerary vessel*



*A bone comb showing dimpled decoration*



*A 5th century brooch*

During the medieval period the site at Heslington East appears to have been predominantly an agricultural landscape, with evidence of field boundaries, some of which were long lived, and widespread indications of plough furrows, often intruding into earlier archaeological levels. There may also have been some quarrying activity at this time, although this has been difficult to date conclusively.



*A wrist clasp of this period*



### Community involvement

Local people have volunteered to help with the excavations and many more have looked round the site during open days or local history group visits. A Heritage Lottery Fund grant in 2010 enabled children from three schools to participate in the site work; this grant also enabled us to produce information boards for the new campus and to produce this booklet.

*A landscape painting inspired  
by the site and created by  
local artist Selina Wells*



The involvement of local people in the project has helped to shape it in various ways: the community have not only contributed to the physical work, but have told us what they want to know about the area they live in. Their insights and local knowledge have had an impact on how we understand the evidence generated by the excavation: it is a two-way process of learning.



In particular, children from Lord Deramore's, Badger Hill and Archbishop Holgate's schools have worked with us, undertaking geophysical surveys, excavations and the recording of features. They also made a replica kiln and fired some Roman-style pots. This experience gave them an appreciation of how we 'make' history, leading them to think about the types of evidence, other than documentary, that can be used to understand the past.



## Heslington East campus landscape takes shape

by Jilly Lovett

As the archaeological work described has progressed, the landscape of Heslington East has been developed to accommodate the campus expansion. Today the dominant feature of the landscape on the Heslington East campus is the lake. Eighteen metres away from the formal planting around the main cluster of Heslington East buildings, naturalistic swales (modern water courses) take the water to wetlands, ponds and the lake, which are surrounded by large expanses of grassland and hedgerows characteristic of a nature reserve. The area is dramatically improving the biodiversity of the former arable land. Bird-life in particular is expanding, with the arrival of many new species, including rare ground-nesting birds such as the little ringed plover.

The new lake, which occupies just under 10% of the 116-hectare site, is already home to an abundance of wildlife. Grounds maintenance manager Gordon Eastham, who has led the project to landscape Heslington East over the last 4 years says, *'The broadleaved pond weed, which is a very good species to have, has established itself well.'* His team are introducing drifts of lily pads that will provide a good habitat for small fish and discourage



*Cladium mariscus is a saw-sedge, this would have been common in the Vale before drainage © Allan Hall*

algal growth. However, Gordon is prepared to be philosophical when things do not go according to plan; he concedes that *'The landscape is dynamic and evolving and you won't beat nature: it will find its own equilibrium.'*

The area surrounding Heslington East has several rich breeding communities of birds, so wild waterfowl such as tufted duck, goosander, goldeneye and pochard have now joined the familiar mallard duck and barnacle, Canada and greylag geese. Waders such as jack snipe, knot and sandpiper have been attracted to the lake margins. Less than 3 km from the campus is Heslington Tillmire, a designated site of special scientific interest (SSSI) with nationally significant species such as golden plover, tree sparrow and yellowhammer, some of which have already been recorded visiting Heslington East. An ecological consultancy firm has carried out surveys and resident ecologist Andrew Walker has monitored the birds every 2 weeks over the breeding season.

One of the most exciting migrant birds to find its way to Heslington East is the little ringed plover, which has nested on the shallow scrapes (gravel banks) for 2 years now. Its range stretches from Europe to the Far East, but for just 4 months around 1000 pairs breed and nest in the UK, during which time it has legal protection. Students from the University's Environment Department are also monitoring the site, recording the plants, birds and aquatic invertebrates in and around the lake and wetlands, as well as testing the water quality and effectiveness of the reed-bed filtration system. This will become a yearly monitoring programme as part of their degree course.



*A typical Vale birch wood © Allan Hall*



There is no doubt that the lake, woodland and wetlands of Heslington East have enhanced the biodiversity of the area with the introduction of new habitats for wildlife, and created a fascinating environment for students, staff and the local community to enjoy. Under its Jubilee Woods project, the Woodland Trust aims to plant 6 million native trees across the UK, providing a lasting, living legacy to celebrate Queen Elizabeth II's reign. York's Diamond Wood is located on Kimberlow Hill, one of the highest points in the York area, with uninterrupted views of York Minster, the White Horse at Kilburn and the Yorkshire Wolds to the east. So far, the University has planted 55,000 trees on Heslington East, all native to the British Isles, of which 23,000 form the Diamond Wood. The trees are from a wide range of species, including field maple, alder, hornbeam, ash, wild cherry, oak, mountain ash, yew, lime, hawthorn, holly, crab apple and blackthorn. Together they will form mixed deciduous woodland that will attract a broad range of insect- and bird-life, and develop an interesting woodland flora and fauna.

© English  
Heritage 2011

*'The plans are to put some pond-dipping platforms and board-walks around the wetlands area behind the main lake, with a fully accessible path from the road. This will allow better access for students wishing to study the aquatic environment and enable us to bring school groups on to the site to see some of the fantastic aquatic wildlife that has already colonised the area,' says Sarah West, Research Associate on the Open Air Laboratories (OPAL) project at the University's Stockholm Environment Institute at York. 'We also hope to raise funds to build a small, off-grid, outdoor field classroom near the small lake which will give us somewhere to teach students and school children whatever the weather!'*



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This publication describes many of the archaeological discoveries from the new campus development at Heslington East. Far from being a solely agricultural landscape in the past, research on the site has found that communities were active and living here from the Bronze Age through to the early medieval period.

