'From William Rudstone for an orchard with two ponds' Archaeological excavation at the Thurlow Nunn Standen site, Lisle Lane, Ely

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Archaeological excavation of parts of two, interlinked, late medieval fish ponds preceded construction of an Aldi supermarket within the former Thurlow Nunn Standen site on Lisle Lane, Ely. The ponds were used for aquaculture during the late 15th–16th century, with eel bones being recovered from the primary silts of one. The ponds were neglected from the 1500s onwards and by the early to mid-18th century survived only as shallow depressions. Artefacts retrieved from them mostly derive from their backfills and mainly comprise pieces of ceramic building materials, low to middling status utilitarian pottery and other domestic objects, including a likely 'tawdry' souvenir. The nature of the ponds is described, and their context discussed in relation to documentary evidence.

Introduction

Archaeological trial-trenching and open area excavation preceded construction of an Aldi retail outlet within the former Thurlow Nunn Standen site on Lisle Lane, Ely in 2008 and 2012 respectively. The trenching demonstrated that significant below-ground archaeological remains survived within the site's south-east corner. The subsequent area excavation investigated these in more detail and revealed them to largely represent two medieval ponds. A full account of the investigation results is held in archive (ASE 2013), with the following text describing only the most pertinent findings.

Background

The Thurlow Nunn Standen site was located *c.* 1km east of Ely Cathedral and consisted of a 0.7ha L-shaped parcel of land, surrounded by houses on three sides and bounded by Lisle Lane to the east (Fig. 1). It was constructed in the early 1970s and served as an agricultural sales and service yard until it was closed in 2008. It had a gentle east-facing slope.

Ely occupies an outcrop of sandstone (Woburn Sands) and mudstone (Kimmeridge Clay). It is surrounded by fenland deposits of gravel, silt, sand, clay and peat, which were deposited during freshwater and saltwater incursions before the fenland was artificially drained and converted to farmland during the 17th century. Its surrounding fenland landscape originally largely comprised marshes, meres, channels and rivers, with contact between sites facilitated by causeways. It was exploited for its natural resources including fish, birds, osiers, reeds, pastures and large areas of land suitable for agriculture (Darby 1940). Fisheries produced large numbers of fish, mainly eels in return for money, and were sufficiently common to form an industry, with major centres at Doddington, Littleport, Soham and Wisbech (*ibid*.).

Ely cathedral played a major role in the development of the town and its surrounding district. It began as a double monastery, for both men and women, founded by St Æthelthryth (also known as St Etheldreda and St Audrey), in 673. Æthelthryth's shrine became associated with miracles and pilgrimage after her death in 679. The monastery became a Benedictine abbey during the reign of King Edgar (959 to 975). Ely was part of the fees of the bishop and prior and became an episcopal see in 1109, during which the bishop remained titular abbot and the prior became head of the abbey. Continuing pilgrimage to Ely led to the development of the St Audrey fairs from the early 13th century onwards, during which goods arriving via long-distance trade were often for sale. St Audrey's name was degraded to 'tawdry' to refer to cheap, showy souvenirs sold at those fairs, thereby coining a new word for the English language. Purchasing and selling of local produce was carried out via the town market. Henry VIII dissolved the priory, but not the bishopric, in 1539 (Carey 1973; Holton-Krayenbuhl 2011).

Lisle Lane was originally a dead-end, situated on the north-east edge of the medieval town, largely surrounded by farmland and small copses (holts) for producing withies and osiers. Its foundation date is not known, although its junction with Forehill probably implies that it took place during or after the 12th century, following diversion of the River Great Ouse and a concomitant founding of Broad Street and Quayside/Waterside (Cessford *et al* 2006; Holton-Krayenbuhl 2011). Thomas de Lisle, bishop of Ely from 1345 to 1361, is almost certainly the origin of the lane's name, although it is not known if he is also its founder. The lane's location makes it likely that its

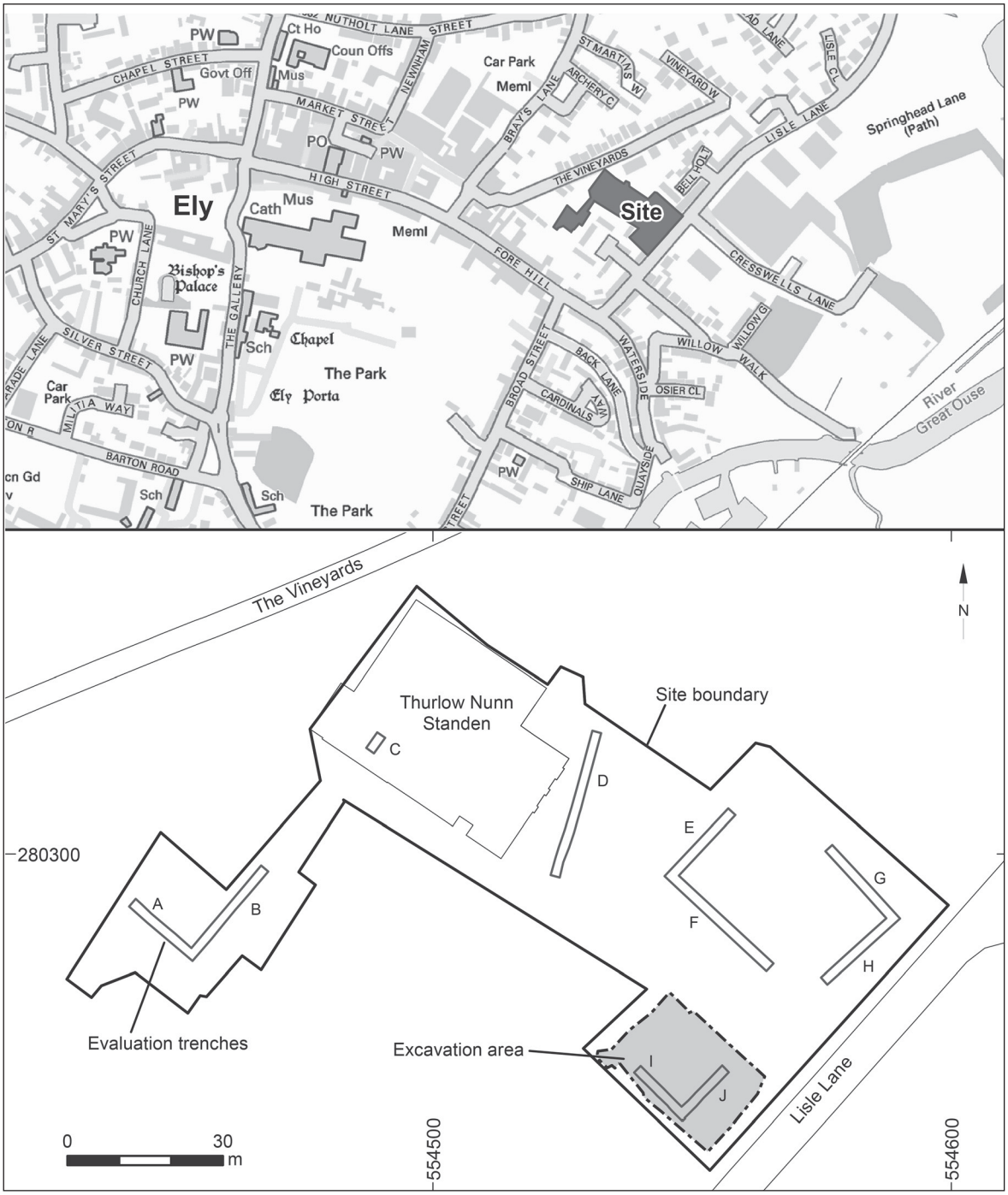

Figure 1. *Site location plan.*

original function was accessing agrarian areas on the town's north-eastern outskirts, which during the medieval period would have been part of the estate of the bishop. Previous local place names include "The Bishop's Vineyard" and "Liles Close", with the former lying north-west of the lane. Liles Close constituted the lane's dead-end and during the early 16th century would have been gated. Holton-Krayenbuhl conjectures the position of an 'ancient lode' (watercourse), running south-east of the Thurlow Nunn Standen site and into the River Great Ouse (2011, Map 3).

John Speed's map of Ely of 1610, and late 19th and 20th century Ordnance Survey maps, probably demonstrate that the agrarian setting of Lisle Lane, apart from the locality of its junction with Forehill, remained largely undeveloped until the late 20th century. The lane's present-day form is as a through-road surrounded by residential and commercial estates, largely a product of the 1970s onwards (Foard-Colby 2007).

Published priory rentals dating to 1522–23 and 1523–24 enable approximate reconstruction of the holdings along Lisle Lane and its junction with Forehill during those periods (Holton-Krayenbuhl 2011, 149–221) (Fig. 2). They often include rental values, names of tenants and immediate neighbours, and brief descriptions of the physical components of each holding, but very seldom enough information to establish each holding's precise outline, size and location. They suggest a small number of holdings lined both sides of Lisle Lane during the reign of Henry VIII, most of which probably served as sites of houses (tenements) or food production (orchards and gardens). Furthermore, they suggest that Lisle Lane was more agrarian in character and less 'urban' and densely occupied than nearby Forehill. The rentals record one of the holdings on the north-west side of the lane as a 'close or garden' in 1522–23 and as an 'orchard with two ponds' in 1523–24 (Holton-Krayenbuhl 2011, 201 and 219). Although the exact location of that holding is not known, it probably sat roughly midway along the then length of Lisle Lane, either close to or within the footprint of the Thurlow Nunn Standen site.

Archaeological investigations have revealed medieval and post-medieval remains alongside and close to Lisle Lane at Quayside/Waterside between Broad Street and the River Great Ouse, the south end of the Forehill street frontage, Forehill Brewery, and the Post Office Sorting Office (Cessford *et al*. 2006; Alexander 2003; Wait 1993; Oakey and Connor 1998). The archaeological remains of the Post Office site included a trackway, intercutting pits and a possible 13th- to mid-14th century timber building, making it feasible that at least one part of Lisle Lane had been inhabited during the medieval period and that the lane itself is at least 700 years old.

The excavation took place within the south-east corner of the Thurlow Nunn Standen site and investigated what was initially thought, from the results of the trenching, to be the north-west corner of a large-ditched enclosure (Fig. 1). Layers of topsoil and concrete, each *c.* 0.3m thick, overlaid the archaeological remains and their removal quickly established that the supposed enclosure ditch was in fact two late medieval to early post-medieval ponds (A and B) interconnected by a gully (71) (Fig.3). Pond A was investigated within excavated segments 52 and 73, and pond B within excavated segment 66. The space between them was examined in box-section 91.

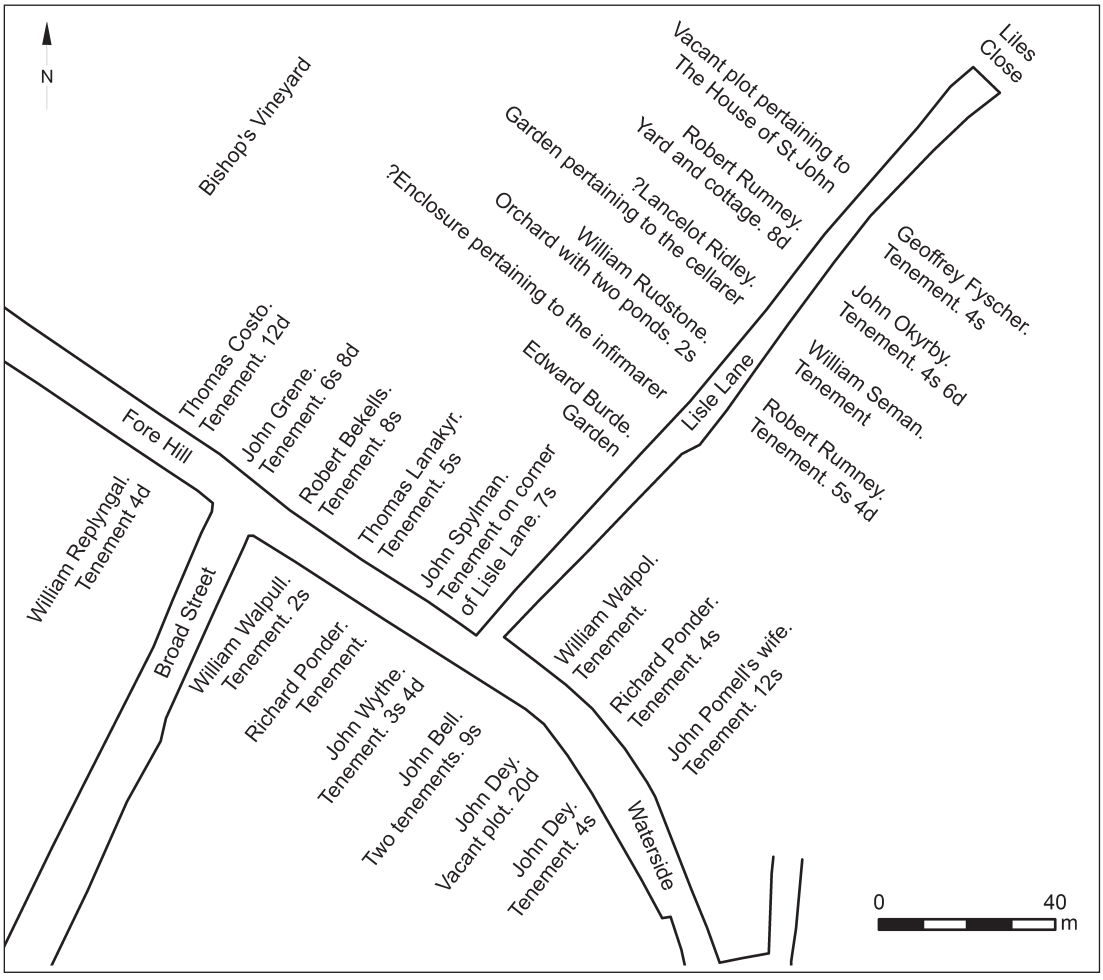

Figure 2. *Schematic plan of Lisle Lane holdings and tenants, 1522–24.*

Segments 52 and 66 were dug by hand and fully excavated to, or below, the full depth of their features. Box-section 91 was excavated to a depth of 0.2m and segment 73 in the south end of Pond A was dug by machine and not bottomed. Ground reduction within the remainder of the south-eastern half of the site was monitored during construction work but revealed no remains. A small stream of water flowed across the north half of the site almost continuously during its archaeological excavation, the possible significance of which was only later to become apparent.

Excavation results

The excavation exposed Ponds A and B, gully 71 and, within the site's south east corner, an unrelated small cluster of late post-medieval and modern pits and post-holes that are not further considered here (Fig. 3). Other modern intrusions were a drain and three holes for concrete pads. The underlying natural deposits consisted of thick layers of brownish yellow and yellowish brown silt clay. Excavation of box-section 91 in surface layer 70 between Ponds A and B yielded pieces of medieval ceramic roof tile, and four sherds of mid 12th to early 13th century pottery. The ponds were laid end to end, on a north-west to south-east alignment, separated by a 2.5m wide gap. Gully 71 interlinked both features. It is probable that both ponds were originally used for aquaculture and that the main function of gully 71 was to maintain a south-east running water flow. Plant remains from the ponds confirm them to have supported aquatic environments and to have been immediately surrounded by marshy ground and wet grassland/bankside habitat.

Pond A

The south-east end of Pond A was exposed within the western end of the excavation area. It was sub-rectangular in plan (Fig. 3), measuring 1.6m deep, 7.6m wide and more than 12.3m long. Its profile, as revealed in segment 52, comprised a broad, flat base beneath a moderately-sloping north-east side (Fig. 4, section 1). Its opposing side is likely to have been steeper but it could not be exposed to confirm this. The pond cut through underlying fresh water incursion deposits of brownish yellow sandy silt clay (61, 62 and 63) and dark grey silt (63), although none of these were able to be dated. Layer 63 included numerous plant stems

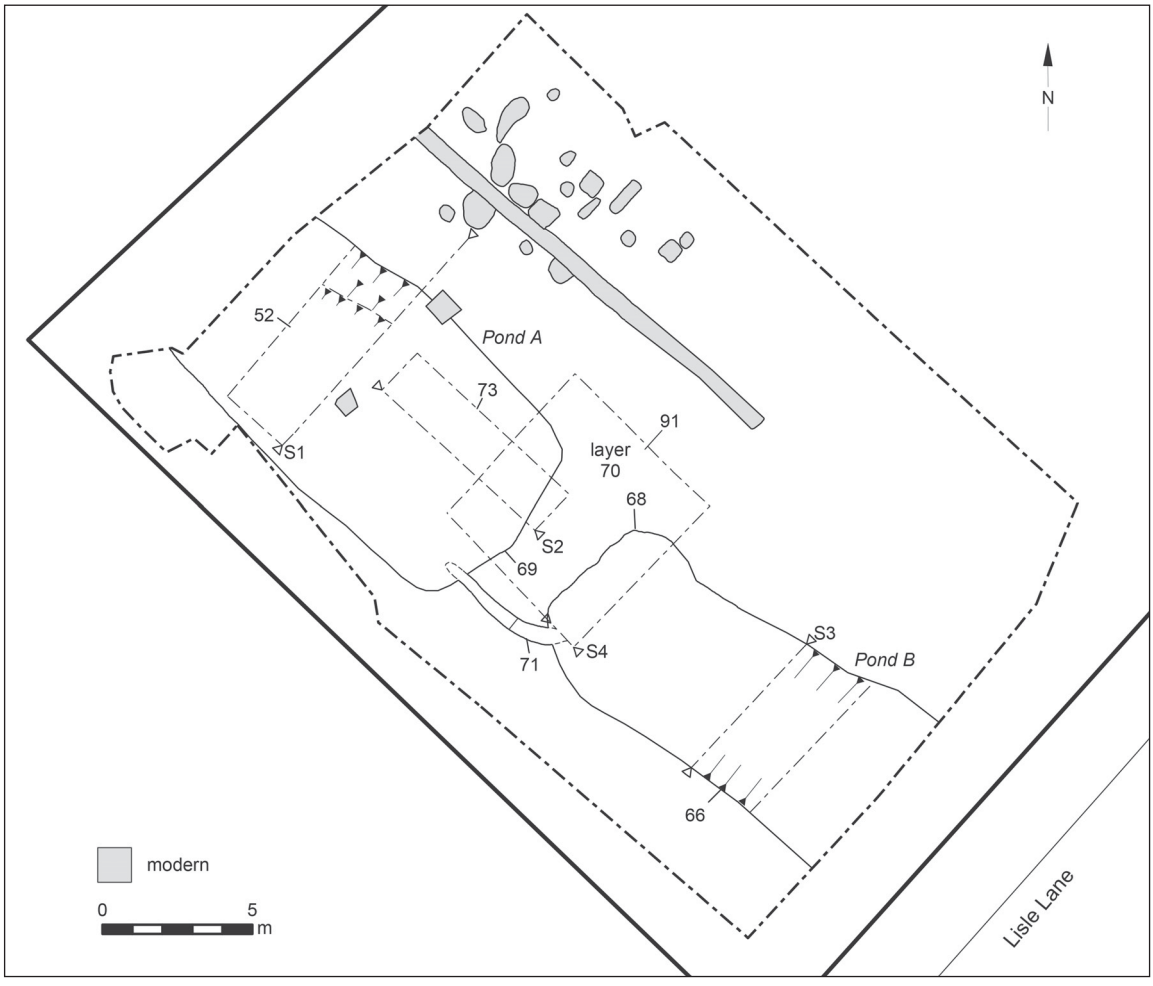

Figure 3. *Site plan.*

and was probably a former reed bed.

The pond's fill sequence in segment 52 consisted of eight deposits, the first two of which were probably related to its functioning as a fish pond (fills 59 and 60), and the remainder to its disuse and infilling (fills 47/49, 48, 50, 53, 54 and 51/58) (Fig. 4, section 1). Primary use fills 59 and 60 are likely to have accumulated in standing water, since they lay horizontal, contained no finds and were both very silty. Fill 59 was a thin, dark band of silt and compressed vegetation, representing an interface between the pond's use for aquaculture and its subsequent neglect and disuse. In contrast, more substantive overlying fills 47/49, 48, 50, 53, 54 and 51/58 were probably backfills since they slumped inwards, generally contained numerous artefacts and were more friable and humic. Fills 53 and 54 were identical and were probably in fact a single deposit, perhaps separated by a partial recut or clear out, as represented by their interface with overlying deposits 48 and 50. Excavated segment 73, at the south-east end of Pond A, partially exposed six silt clay fills (75 to 80), all of which were probably related to its subsequent disuse (Fig. 4, section 2). All of the pond's artefacts came from its disuse deposits. Deposit 51/58 was the earliest fill to contain artefacts, including pieces of late 15th-16th century Cistercian Ware and rim sherds of Late Ely Ware drinking jugs.

Faunal remains and other artefacts lay within the pond and became more numerous towards the surface. Fills 51/58, 50, 48 and uppermost fill 47/49, in particular, contained most of them. These included substantial amounts of building debris (brick and tile, stone roof tile and lime-washed mortar fragments) and items of domestic rubbish (primarily pottery, but also animal bones, oyster shells, fragments of quern and whetstones, pieces of coal and coal slag, metalwork and a chalk net weight). Further items included a copper-alloy pin, an incomplete scale tanged iron knife, an iron swivel hook, a copper-alloy chape and a lead alloy token or coin. Pieces of clay tobacco pipe were also present, but only within latest fill 47/49. The fills subsequent to deposit 50 were all post-medieval and were related to use of the pond for intermittent dumping of earth, brick and tile debris and mostly domestic artefacts. Sherds of Manganese Mottled Ware, Staffordshire Slipware, English Stoneware and Staffordshire Salt-Glazed Stoneware pottery formed part of their contents.

The faunal evidence for the pond having been used for fish-keeping is slight, in that it comprises a small number of eel bones, most of which come from its primary fill 59. Perch bones were also present, although these come from the pond's later deposits, making it more likely that they represent unwanted food waste, thrown into the pond long after it had ceased to be used as a fish pond.

Pond B

Pond B was aligned end to end with Pond A and was separated from it by a *c.* 2.5m wide gap. It measured 5.5m wide and 1.25m deep and was therefore

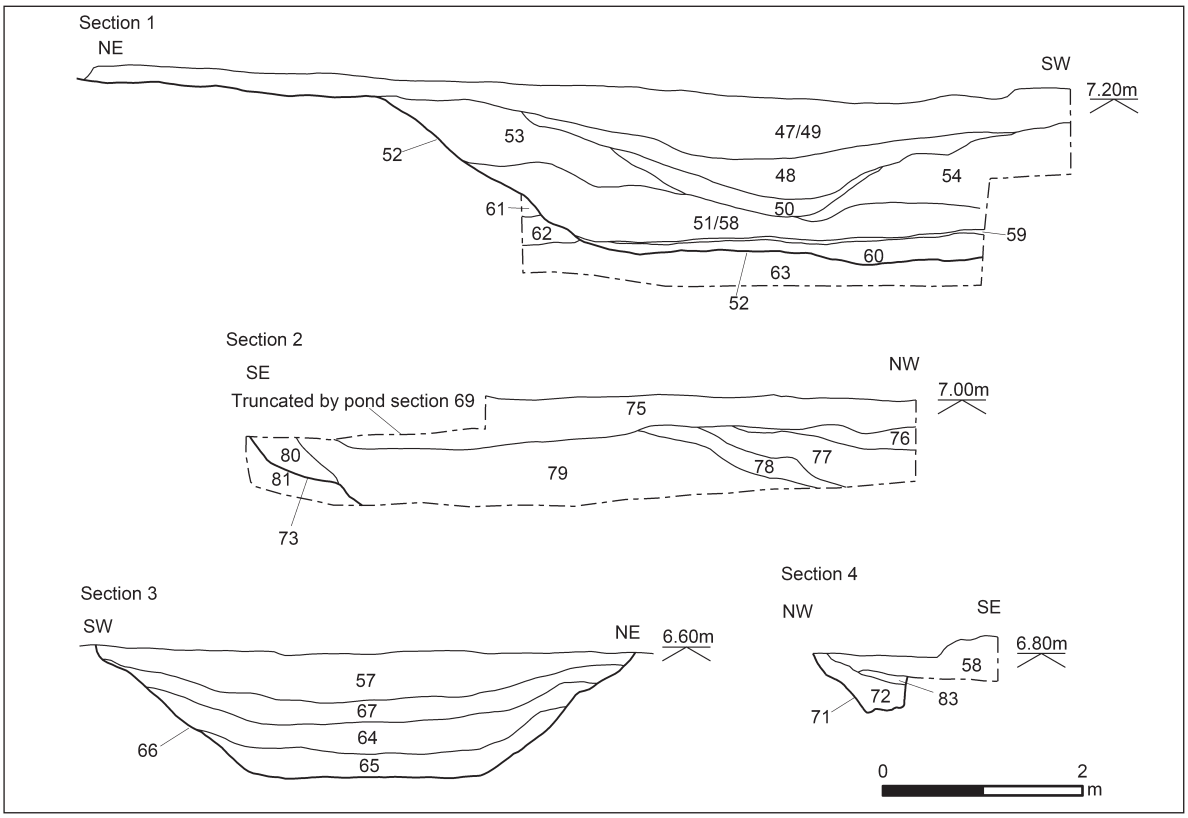

Figure 4. *Section drawings 1–4.*

slightly smaller than its adjacent counterpart (Fig. 3). Its length was at least 12.5m, but probably no more than *c.* 16m, otherwise it would have encroached upon Lisle Lane. Its profile comprised a flat base and moderately sloping sides and was therefore identical to that of Pond A.

As recorded in segment 66, its deposit sequence consisted of four sandy clay or sandy silt fills (57, 64, 65 and 67), all probably related to its secondary use for disposing of rubbish, and intermittent infilling with soil after it had ceased to be used as a fish pond (Fig. 4, section 3). It contained no primary silting deposit as found in Pond A, and was therefore perhaps scoured of its content shortly before disuse.

Artefacts and faunal remains were recovered from all four of its fills and increased in quantity from lowest fill 65 upwards. The artefactual and faunal contents of its basal fill (65) comprised little more than two fragments of oyster shell and a handful of roof tile. Brick and roof tile rubble and pottery sherds formed much of the content of its latest three fills and were accompanied by other items, including an iron rowel spur, a late 16th to early 18th century shard of green bottle glass, and fragments of green-glazed medieval floor tiles. The pottery-dating evidence and the pond's interconnection with Pond A make it likely that both features were in use as fish ponds at the same time, later serving as convenient depositories for rubbish. The pottery from both features is mostly utilitarian, domestic in nature and related to drinking and cooking, making it probable that it came from a nearby household.

Gully 71

Gully 71 linked the north-west corner of Pond B to the south-west corner of Pond A and was probably a leat; a means of controlling water flow between ponds and increasing water aeration through provision of small channels and falls (Fig. 3) (Roberts 1988). Its cut had variable, moderate to steeply sloping sides and measured 1.2m wide and 0.6m deep (Fig. 4, section 4). Two disuse deposits (72 and 83) were present within it and the latest of these (72) included small amounts of roof tile, animal bone, oyster shell, and sherds of residual early to mid-13th century pottery.

Sieving of bulk samples taken from selected deposits from both ponds revealed similar plant assemblages, with those of the earliest fills being generally more frequent and varied than those above them. Seeds of true aquatic plants from the bulk samples included crowfoot, pondweed, horned pondweed, marsh pennywort, arrowhead, whorled water-milfoil, spiked water-milfoil, water-pepper and duckweed. Aerated water is essential for fish farming and can be increased by means of small waterfalls and/or by natural and/or human inclusion of aquatic plants (Roberts 1988, 13), although in the case of Ponds A and B it is impossible to tell from the archaeological evidence if any of the aforementioned plants were deliberately included.

Discussion

Lisle Lane in its present-day form is a through-road surrounded by residential and commercial estates, although until modern times it was a dead-end, occupying a largely rural location on Ely's north-east periphery. The excavation has found no archaeological evidence to date the lane's foundation, although its junction with Forehill and Quayside / Waterside makes it probable that it came into being during or after the 12th century. The 13th to mid-14th century remains of a probable timber building on the Post Office Sorting Office site (Oakey and Connor 1998), and the residual sherds of 12th to early 13th century pot sherds which form part of the findings of the Thurlow Nunn Standen site, perhaps imply that the lane was in place and bordered by lane-side occupation by the 12th to mid 14th century.

Ponds A and B are almost certainly medieval fish ponds, in that such features of that period were often closely grouped and interlinked by leats (Aston 1988). Medieval fishponds varied in shape from rounded to rectangular and although the development of the 'linear form' shared by Ponds A and B is not understood (Chambers and Gray 1988, 122), it nonetheless was perhaps a late introduction, adopted during the 16th century in order to facilitate trawling of large bodies of water with little chance of fish escaping the net (*ibid*. 116). From this, it can perhaps be concluded that the linear form of the two Lisle Lane examples made them not just easier to trawl but also innovative and therefore something to be admired.

A reliable, near constant supply of fresh running water is a requisite for nearly all fish ponds (Roberts 1988, 13) and since no surface stream or river is present upslope of the Thurlow Nunn Standen site its source of water must have been a spring. If that was the case then the ponds were perhaps used to incubate fish eggs, since fresh spring water is normally less contaminated than stream or river water and therefore less likely to be detrimental to developing embryos. That spring possibly still flows and perhaps accounted for the steady trickle of water which ran across the north half of the site during the archaeological excavation.

It is not known how Pond B was drained, and although it can be suggested that it was facilitated by a gully feeding into a lane-side ditch, no direct evidence for either of these has been discovered. Perhaps the water from the pond was diverted into Holton-Krayenbuhl's postulated watercourse to the south-east and from thereon into the River Great Ouse (2011, map 3).

The faunal evidence for the ponds having been used for aquaculture is admittedly slight but nonetheless includes the small quantity of eel bones from the primary fill of Pond A. Fisheries and eel fishing were significant components of the fenland economy (Darby 1940), and even though eels were one of the cheaper species, they were a popular food item of the aristocracy (Dyer 1994, 108). Fisheries were commonplace within the surrounding fenland, suggesting a

secondary function for ponds such as these. Given their small size and relatively urban setting, an alternative explanation to that given above is that Ponds A and B functioned as holding (*servatoria*) rather than breeding (*vivaria*) ponds (Currie 1990, 22).

In the context of Ely, it is probable that both ponds belonged to a wealthy owner, probably the bishop or prior or one of their most senior brethren, since although fishponds often proved profitable, they were also costly to construct, maintain and manage (Dyer 1994, 101–111; Hoffman 1996, 659). The requisites for establishing a medieval fish farm included monetary wealth, the obtaining of an appropriate site, and an ability to acquire, finance and manage skilled professionals, including dykers to construct ponds and establish water flow and levels, and carpenters to make pipes, sluices and other wooden fittings (Roberts 1988, 13; Dyer 1988, 27). Furthermore, after the farm had been built, it would have needed to employ fish farmers to run and maintain it and to obtain, transport and resupply it with fish (Taylor 1988, 465). Medieval fish ponds required constant regular drainage, every three to five years, followed by a dry season during which plant cover was left to grow in order to increase nutrition levels (Currie 1990, 23; Hoffman 1996, 660). They also required frequent recutting and remodelling, the evidence for which at Lisle Lane possibly includes the absence of primary silts in Pond B.

The consumption of freshwater fish was mainly the preserve of the upper classes and the aristocracy during the medieval period, which is demonstrated by the frequent occurrence of fish ponds in association with high status sites, including manors, castles and monasteries (Dyer 1988, 27). The Church, for religious reasons, forbade the consumption of meat on Wednesdays, Fridays and Saturdays and throughout Lent and Advent, making eating of fish a popular substitute (Mortimer 2009, 168). The excavation has found no firm evidence to indicate whether or not a fish-keeper lived close to the ponds in order to prevent theft, although if one did it might account for some of the site's late 15th-16th century artefacts.

The plant remains from the ponds include no apple or grape pips and are therefore unable to illustrate the historically attested nearby presence of Rudstone's orchard or the bishop's vineyard. It could be the case, as with the bones and the artefacts, that much of the plant macrofossil assemblage was brought in as waste from beyond the site boundary and is therefore not directly related to the use of the site for fish farming. Fish ponds became increasingly the commercial operation of peasant fish-keepers during the late medieval period, leased from secular and ecclesiastical landlords, and by the post-medieval period, their use was in decline (Currie 1990, 24; Currie 1991, 99–100 and 105). The Lisle Lane ponds may have been part of that trend.

Rentals dating to 1522–24 record both sides of Lisle Lane to have been lightly settled during that period, and to have been situated within a largely rural setting, consisting mainly of the bishop's vineyard and some of his fields and holts (Holton-Krayenbuhl 2011). The information they provide is not always fully comprehensible, although it probably indicates that approximately ten peasant holdings lined Lisle Lane during the early 16th century, five of which comprised a cottage and tenements and therefore people's homes, and five an 'enclosure', 'gardens' and 'an orchard with two ponds', and therefore sites of local food production. The precise location, size and form of the holding comprising two ponds and an orchard are not recorded, although it probably lay somewhere alongside the north-western side of the lane's central stretch. It was rented by a local inhabitant called William Rudstone and it was part of the fee of the prior. References to ponds within Ely are fairly infrequent in the 1522–24 rentals and this increases the likelihood that Ponds A and B were part of his holding. However, if that was so, then Rudstone was possibly using them as duck ponds or water storage containers, since he post-dates their use for fish-keeping by up to *c*. 100 years, by which time both ponds were probably only half their original depth. The ponds' faunal remains include small amounts of domestic fowl bones, although it is not known if these represent discarded food waste and/or some of the pond's avian users. Other information provided by the rentals about Rudstone is that in addition to his Lisle Lane 'orchard with two ponds', he rented two other holdings, a tenement on High Street and an alder-holt in Middle Fen (*ibid*. 193 and 185). The low rental values of the holdings along Lisle Lane suggest that all of their tenants, including Rudstone, were low to middle status peasants. Ely is recorded as having forty fishponds during the 19th century, suggesting that they became more mundane and commonplace over time.

If Ponds A and B were part of the fee of the prior during their late 15th-16th use as fish ponds then it provides a high status connection. Both the bishop and prior had other ponds including some within the grounds of the cathedral and priory (Chapman 1907, 3, 136 and plan 1). Two fish ponds were also part of the bishop's palace in Somersham (Taylor 1989). These were rectangular and very large and they flanked part of the approach route leading into the grounds of the palace. Their siting was clearly designed to be aesthetically pleasing and it is possible that Lisle Lane Ponds A and B were similarly set within a garden-like landscape. One of the jobs of the sacrist during 1340 to 1341 was to look after the priory's fish ponds and to purchase fish for them (Chapman 1907, 3). If this was still the case when Ponds A and B were in use, then the evidence for it remains to be identified. A practical function, rather than ornamental, for these ponds is suggested by their location within an area of peasants' holdings rather than close to major ecclesiastical or secular high status buildings.

Most of the retrieved artefacts come from the post-medieval sequences of backfills within Ponds A and B, and are therefore unrelated to their use for fish-keeping. They comprise two distinct assemblages of domestic/personal artefacts and building debris. The

domestic material mainly comprises locally-produced Red Earthenware and Ely Ware pottery in utilitarian bowl and jar forms, but also includes small quantities of imported items, such as French or Spanish glass and German lava quern. Recovered metalwork includes pins, knives and furniture fittings. A lead token forms part of the assemblage and is perhaps a locally-made artefact for pilgrims – a possible 'tawdry' souvenir. Faunal remains comprise pig, sheep/goat, horse, fallow deer, hare/rabbit and domestic fowl. In contrast to the primary deposits of the ponds, fish bones recovered from the later backfills derive from saltwater species, including cod, herring, plaice, flat fish and ray, in addition to abundant oyster shell. The chalk net weight from Pond A probably implies that fishing was also taking place locally.

The glazed floor tiles, brick, and masonry stone may be assumed to have derived from relatively high status buildings in the town, most probably belonging to the cathedral and priory. This rubble cannot be linked to the demolition or modification of particular buildings or to specific episodes of remodelling of an area of the town; it may have been stockpiled prior to being included in the backfill of the ponds and come from multiple sources.

Conclusion

The results of the investigation of Ponds A and B suggests them to have been purpose-made, sited within a garden and to have been used to keep eels. It also suggests them to originally have been part of the estate of the priory and that, after they were no longer required for fish-farming, they became part of a medieval holding, one of the tenants of which was a person called William Rudstone. While there are many documentary sources that allude to the variety of species bred, held and eaten, the findings of the Thurlow Nunn Standen site are possibly a rare instance of retrieval of corroborating evidence.

The ponds fell into neglect during the 16th century and from thereon were intermittently backfilled with a variety of debris, some of which is likely to have originated from domestic households and abbey and cathedral buildings, possibly reflecting increasing leasing of ecclesiastical land to peasant tenants. Whether this was a consequence of the Dissolution is unknown.

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