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The archaeology of burgage plots in Scottish medieval towns: a review

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ABSTRACT

Burgage plots, typically narrow strips of land with a house near the street frontage, are one of the most striking features of the medieval townscape. Archaeological excavations in Scottish burghs over the last 25 years have recovered considerable evidence concerning their nature, development and function, and this paper aims to provide an overview of the archaeological evidence for a feature of Scottish burghs that is rapidly disappearing from the modern town plan.

INTRODUCTION

Many of the most notable features of the medieval burgh – kirk, ports, market cross, tolbooth and tron – have, in many burghs, already been lost. By contrast, burgage plots, simple strips of land which essentially made up the medieval burgh, often survive to the present day. These are the clearest reminder of the form and character of the early town, in some burghs they are already the last surviving link with the medieval past. Increasingly, however, they too are under threat from redevelopment.

Most archaeological work in the Scottish burghs has taken place in the last 25 years and a sufficient body of evidence has now been gathered to begin to create a coherent research framework (Barclay 1997, 33–4). Some early excavations undertaken in Aberdeen, Perth and St Andrews have been published as monographs (Bowler et al 1995; Holdsworth 1987; Murray 1982; Rains & Hall 1997), but much work remains unpublished. In particular, a large number of excavations were carried out in the 1970s and 1980s under the Manpower Services Commission, especially in Glasgow, Ayr and the Borders, but not published. A recent programme of analysis and publication, funded by Historic Scotland, has begun to address this problem and some preliminary results have been incorporated within this paper. Much of the evidence from the smaller burghs is derived from the urban monitoring programme carried out by the Scottish Urban Archaeological Trust between 1983 and 1994, a programme funded by Historic Scotland and its predecessors.

The published and unpublished material reviewed is clearly biased towards Aberdeen, Perth and St Andrews, where most archaeological work has been carried out, where preservation is consistently good and where the publication record is better than most. In addition, a number of useful summaries of archaeological work in key burghs has recently been published including Arbroath (Perry 1998a), Dunfermline (Perry 1999a), Elgin (Hall et al 1998), Inverness (Perry 1998b) and North Berwick (Hall & Bowler 1997). Reports on a number of important sites excavated in the 1970s have still not seen the light of day, nor are their archives accessible,

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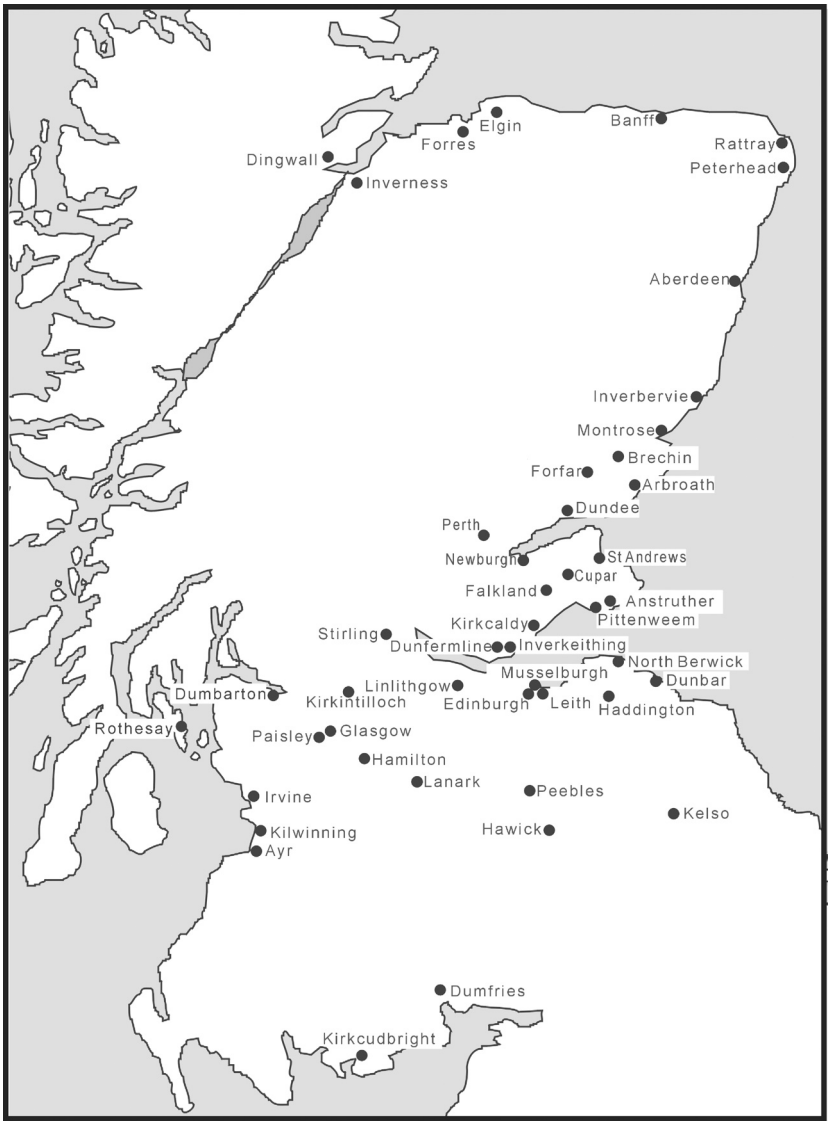

ILLUS 1 Burghs referred to in text

not least Perth High Street (the 'Marks & Spencer' site), but also various sites in Elgin and St Andrews. From the little we know of these sites, all appear to have recovered good evidence for occupation in the backlands, with plot boundaries, timber buildings, industry, pits and midden well represented.

This paper concentrates on just one aspect – burgage plots – and is intended to provide an overview of the work carried out to date. The text has been arranged thematically and topics explored include plot sizes, property boundaries, common and communal features, spatial arrangements, buildings, access and land use. Evidence from around 50 burghs has been examined (illus 1).

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THE BURGAGE PLOT

The burgage plot, often referred to as a 'toft', 'rig' or 'tenement', was a measured strip of land, fixed in width and area, fronting onto a street and typically much greater in length than breadth. The narrowness served to ration the valuable street frontage and maximize the number of plots which could be accommodated. This allowed as many plot holders as possible equal access to the market place, usually the high street itself, where traders operated from stalls or from booths attached to the front of their houses or workshops. The effect, as many burghs had a single linear street, was to create the characteristic herring-bone pattern of many Scottish town plans: Elgin, Forres, Haddington, Linlithgow and Montrose are particularly fine examples. Over time, the backlands of the burgage plots were built on and vennels developed between the plots to provide access to the back lanes which lay parallel to the high street, to the rear of the plots; gradually, some vennels developed as street frontages in their own right.

There is little, if any, evidence for burgage plots in Scotland prior to the historic foundation of the burghs in the early 12th century. That is not to say that they are a peculiarly 12th-century, or Anglo-Norman creation. In England, Ireland and elsewhere in continental north-west Europe, the long narrow plot with a building fronting onto a road or path and often containing evidence for craft-working, clearly has much earlier origins; evidence can be found in the Saxon towns and trading centres of England (notably Ipswich, London, Southampton and York), the Five Boroughs of the Danelaw (Derby, Leicester, Lincoln, Nottingham and Stamford) and the Viking towns and trading centres of Ireland (Cork, Dublin, Waterford and Wexford) and north-western Europe (eg Quentovic, France; Dorestad, Netherlands; Ribe, Denmark; and Sigtuna, Sweden) (Biddle 1976, 99–150; Clarke & Ambrosiani 1995; Edwards 1990, 179–92; Ottaway 1992, 120–61).

In Scotland, only the 11th to late 13th-century phase of occupation at Whithorn (Period IV) has yet provided any archaeological evidence of proto-burgage plots that could conceivably predate the foundation of burghs in the 12th century. This period saw a new type of building being constructed on this Early Christian monastic site, strikingly similar to buildings previously found in Hiberno-Norse Dublin (Hill 1997, 55). They occupied an outer zone with a series of radial paths leading from the houses and workshops to an inner precinct thought to have been used as a market place.

BURGESSES & BURGAGES

The creation of the burghs from the early 12th century onwards was one of a number of policies implemented by David I (1124–53) and his successors, policies designed to modernize Scotland against a background of emerging states and increasing trade in Europe (Lynch et al 1988, 3). To stimulate the economy and increase the royal revenue through tolls and urban rent, burghs were granted wide trading privileges, with burgesses – drawn from specialist merchants and master craftsmen, holding monopolies over the export and trade of wool, hides and animal skins and certain manufacturing processes (Duncan 1975, 474–5; Ewen 1990, 2).

Burgesses were the most privileged class of inhabitants of the burgh and were attracted, many of them from England, Normandy and the Low Countries to the newly created Scottish burghs by the offer of wide trading privileges and concessions. These were primarily merchants who were familiar with towns and trade, particularly those from Flanders, one of the most densely populated and industrialized parts of medieval Europe (Duncan 1975, 475–7). In return they were to enjoy lucrative concessions, but the foundation of their rights and privileges was their simple plot of land in a burgh – the burgage plot, the importance of which was reflected not only in the ownership of land in a burgh but

in the requirement to build a house on it and take up residence (Ewen 1990, 92). To attract potential settlers to the newly created burghs, particularly merchants and craftsmen, land or burgages were offered rent-free for a fixed period known as *kirset* or *kirseth*, during which time the burgess had to build and occupy a house. This was usually one year, but could be as long as ten years in burghs which found difficulty attracting settlers; five years in Dumbarton, for example, and ten in Dingwall (Duncan 1975, 476). The burgess swore fealty to the burgh overlord (variously Crown, lord or church) and, after the *kirseth*, paid a rent. Burgages were heritable and could be purchased to rent or sub-let, or sold to provide capital, and an increasingly active market in urban property developed, particularly amongst the burgesses themselves.

THE LEGAL FRAMEWORK

Burghs, burgesses and burgages were essentially legal concepts. It is clear from the documentary sources that David I (1124–53) did establish some new laws when founding his burghs, but the best known collection, the *Leges Burgorum* (Laws of the Burghs) often attributed to David I, is difficult to date and does not necessarily belong to the 12th century (MacQueen & Windram 1988, 208–27). The *Leges Burgorum* are, in fact, partly modelled on the mid-12th-century customs of Newcastle-upon-Tyne and may even have been drawn up for Berwick-upon-Tweed before being widely adopted by other Scottish burghs during the Middle Ages. Another institution, known as the *Four Burghs*, probably evolved during the 12th century as burgh councils asked each other for advice on points of law (Ewen 1990, 146). Originally this forum was represented by four burgesses, each from the burghs of Berwick, Roxburgh, Stirling and Edinburgh, and they met to determine cases of burghal law and to formulate rules to govern burgh life.

In Scotland burgess status and taxation was based on the holding of one particate or 'rood' of land; a rood being one quarter of an acre. The laws of the Four Burghs specified the measurement used to lay out plots on the frontage as being one perch in width. There is, however, considerable confusion over the terminology of medieval units of measurement, in particular, the use of the terms perch, rod and pole (Hindle 1990, 52–3). The standard medieval unit of length was, in fact, the pole, equivalent to 5.03m. A perch or rod was a measurement of area equivalent to a square pole, but all three terms were commonly used as units of length.

As burgess-ship, and the right to trade, were directly linked to property holding, the formal laying out of the plot boundaries and their maintenance over time were clearly very important. This relationship is also reflected in the continuity of many medieval property lines through to the present day and the sheer number of disputes over property boundaries that were heard by the burgh courts. The plot boundaries were formally laid out by burgh officials known as *lineatores* or 'liners', who may have been drawn on an ad hoc basis from the burgesses themselves (Ewen 1990, 49; Torrie 1990, 53). Over time, as building techniques improved and simple timber buildings were replaced in stone, liners were again responsible for the positioning of features such as fore-stairs, gables, windows and chimneys (Torrie 1990, 70).

THE PLOTS

To avoid the text being broken up excessively by references to site reports, the reader is asked to refer to the site and reference list in Appendix 1.

PLOT SIZES

Medieval Scotland shared many of the measures of length, area, volume and weight familiar in England although with local variations (Barrow 1981, 173–4). According to burgh law, a rood (quarter of an acre) should be the standard

ILLUS 2 Canal Street II, Perth. Shallow gullies mark out the six medieval properties

holding of land in a burgh. The Scots acre (c 5142sq m) is thought to have been larger than the English acre (c 4047sq m) and to have defined a stretch of arable land 258m (a furlong) in length by about 19m in width (Barrow 1981, 173). If this rural unit of landholding was being used in burghs and was simply being divided into four equal strips, a standard Scottish burgage plot should, therefore, measure 4.8m in width by 258m in length. Using an English acre (140 square poles), a rood would equate to each plot measuring 5.2m by 201.2m; that is one pole wide by 40 poles long.

In practice the width of plots does generally appear to conform to the standard pole, or slightly wider, but there is considerable variety in the length of the plots. The average of the longer plots found in burghs has been calculated as being c 130m, the average shorter plot c 73m (Naismith 1989, 27). Only in parts of St Andrews, where some plots measure on average 11–11.5m in width, do any plots come close to this standard, most other burghs falling well short (Brooks & Whittington 1977, 288).

Analysis of burgage plot sizes from cartographic sources has shown that, although there are plots of similar dimensions within any one town, there is also great variation between plot sizes both within burghs and between burghs. In Perth, for example, the majority of plots were between 5.5m and 6.4m wide, with a secondary cluster around 7.9m wide (Spearman 1988a, 56). In St Andrews, the average plot width size was much greater. In the west half of the town, the plots vary between 8.5 and 9.8m with most close to 9.1m (Brooks & Whittington 1977, 288). The majority of the plots in the earlier, eastern, half of the burgh, thought to have been laid out by Mainard the Fleming, a burgess of Berwick, are slightly larger, measuring 11–11.6m. In Dunfermline, a study of cartographic sources and sasine evidence suggests plot widths on the main street frontages of c 6.8m but with plots varying between 6.3 and 7.6m (Torrie 1990, 52). These variations in plot widths may simply have been to balance the area of shorter or longer plots, which in turn may been constrained or influenced by topographic features such as natural contours, rivers, streams, marshes or existing trackways. In such cases, burgesses may have paid rent proportional to the area of their properties.

The archaeological evidence shows considerable variation within and between burghs, and over time, and also reveals episodes of the replanning of some parts of burghs. At 42 St Paul Street, Aberdeen, for example, four plots of unequal size were laid out around 1200, stretching back from Upperkirkgate. At the beginning of the 14th century these were reorganized to create more regular plots, 5.5–6.0m wide. In the backlands of South Street, Perth (see Canal Street II excavation in Appendix 1 & Table 1), six carefully laid out plots were uncovered (illus 2). They had not in fact been laid out until Period III in the site's history and overlay earlier, 12th-century activity including pits and structures. The plots measured about 7m in width but one plot was only 3.5m wide. The regularity of the plot sizes

TABLE 1
Common features of burgage plots

Burgh	Site	Plots	Forelands	Buildings	Yard	Industry	Midden	Pits	Wells	Drains	Communal	Garden
Aberdeen	Queen St Midden Area			Back		Yes	Yes	R/C				
Aberdeen	12–26 Broad St	Internal	Yes	Front				R				
Aberdeen	42 St Paul St	Plot/Internal		Back	Yes	Yes	Yes	R/C/S	Yes	Yes	Yes	Yes
Aberdeen	45–7 Gallowgate	Plot	Yes	Front	Yes	Yes	Yes	R/C		Yes	Yes	Yes
Aberdeen	45–75 Gallowgate			Front	Yes	Yes		Q				
Aberdeen	30–46 Upperkirkgate	Plot		Front				R?/Q?/S				
Arbroath	77–9 High St		Yes	Front	Yes	Yes	Yes	R/Q				
Ayr	Carrick St/167 High St	Plot/Internal				Yes	Yes	R		Yes		Yes
Ayr	Garden St, Newton	Plot/Internal		Back	Yes			R		Yes	Yes	Yes
Ayr	21 Harbour St				Yes	Yes	Yes	R	Yes			
Ayr	Loudon Hall, S Harbour St	Plot/Internal		Back	Yes	Yes		S				Yes
Dumbarton	94–102 High St			Back		Yes	Yes	R/C		Yes		Yes
Dunfermline	Lauder Tech	Plot				Yes						Yes
Edinburgh	High St	Plot/Internal		Back	Yes		Yes	R/C		Yes	Yes	
Elgin	High St	Plot				Yes		C	Yes			
Elgin	115 High St	Plot		Back				R/C/Q			Yes	
Forfar	Castle St	Plot		Back			Yes	R				Yes
Glasgow	College Goods Yard	Plot		Back?		Yes		R/C/Q	Yes		Yes	
Glasgow	High St/Shuttle St	Plot				Yes		R		Yes		
Inverness	13–21 Castle St	Plot/Internal	Yes	Front/Back	Yes	Yes	Yes	R/C/Q?		Yes	Yes	Yes
Kelso	13–19 Roxburgh St			Front?	Yes	Yes		R/Q	Yes			
Lanark	Castlegate/Broomgate		?	Front?	?	Yes		R/C				
Peebles	Cuddyside, Bridgegate			Back	Yes	Yes	Yes			Yes	Yes	
Peebles	Tolbooth, Bridgegate	Plot	?	Front	Yes	Yes	Yes	C	Yes	Yes	Yes	Yes
Perth	Canal St I	Plot		Back			Yes	R/S		Yes		Yes

TABLE 1 (*cont*)

Burgh	Site	Plots	Forelands	Buildings	Yard	Industry	Midden	Pits	Wells	Drains	Communal	Garden
Perth	Canal St II	Plot			Yard	Yes	Yes	R/C	Yes	Yes	Yes	Yes
Perth	Canal St III	Plot/Internal		Back	Yes	Yes	Yes	R/Q	Yes	Yes	Yes	Yes
Perth	Mill St	Plot/Internal		Back		Yes	Yes	C				Yes
Perth	King Edward St	Plot	Yes	Front/Back	Yes	Yes	Yes	R		Yes	Yes	
Perth	M&S, High St	Plot/Internal	Yes	Yes	Yes	Yes	Yes	R/C/Q/S?	Yes	?	Yes	?
Perth	Kirk Close	Plot/Internal		Back	Yes	Yes	Yes	R/C		Yes	Yes	
Perth	29–30 S Methven St	Plot		Back	Yes	Yes	Yes	R		Yes		
Perth	80–6 High St	Plot/Internal?	Yes	Front/Back?		Yes	Yes	R/C/Q			Yes	
Perth	Meal Vennel		Yes	Front	Yes	Yes		R/Q/S	Yes			Yes
Perth	Scott St	Plot/Internal				Yes	Yes	R/Q	Yes	Yes		Yes
Perth	103 High St											
Rattray	Deserted Burgh	Plot/Internal		Front/Back	Yes	Yes				Yes	Yes	
St Andrews	Auction Hall	Internal?		Back		Yes		R				Yes
St Andrews	Cinema House	Plot		Back				R/C/Q	Yes	Yes		Yes
St Andrews	134 Market St			Back		Yes	Yes	R/Q				Yes
St Andrews	120–24 Market St	Plot				Yes						Yes
St Andrews	29 North St			Back	?			C/Q	Yes	Yes		
St Andrews	125 Market St					Yes	Yes	Q				Yes
St Andrews	South St/Abbey St	Plot	?	Back				R				
St Andrews	106–8 North St	Plot	?	Back								
St Andrews	Byre Theatre			Back				R/C				Yes
St Andrews	137 Market St	Plot		Back?		Yes		Q				Yes
St Andrews	50–2 Argyle St			Back		Yes				Yes		Yes
St Andrews	106–10 South St	Plot/Internal		Back		Yes	Yes			Yes		Yes

Key

Buildings: Front = frontage; Back = backland Pits: R = rubbish; C = cess; Q = quarry; S = storage

has prompted the interpretation that this area of Perth had indeed been laid out as part of a deliberate creation by William I (1165–1214), as suggested by documentary references to his 'new burgh' (Spearman 1988a, 51).

At New Row, Dunfermline, an opportunity arose to test archaeologically burgage plot sizes derived from analysis of cartographic and sasine evidence (Torrie 1984). The excavation uncovered two plots which extended back from the New Row frontage (a medieval suburb) to the abbey precinct wall. The plots here were found to measure c 10m in width, much wider than the plot sizes on the High Street (Causegait), which measured on average c 7m, and closely correlated with the findings of the town plan analysis.

Excavations at Castle Street, Inverness, uncovered three plots, laid out in the 14th century, one 8m wide, two 7m wide. At High Street, Edinburgh, the plots (probably laid out in the 14th century) were found to measure 7.6m in width and 137m in length; at Kirk Close the three plots identified (14th century in date) fell within the range 5–6.5m wide; at High Street, Perth (Marks & Spencers), the plots in the 12th and 13th century measured on average 7m wide.

Working out plot sizes from excavated evidence can be difficult, as the boundaries can take on a variety of forms. In the case of wide features such as ditches or lines of pits, should measurements be taken between centres, or between internal edges? This is made all the more difficult when these features were routinely recut. Equally, the boundaries themselves are rarely straight. Recent work at two sites in Perth – a High Street frontage site (80–6 High Street) and a South Street backland site (Canal Street III) – showed that the plot boundaries on the frontage remained fixed. No doubt their position changed little over many centuries because access to the market place was all-important, whereas in the backlands the property boundaries were more fluid and may well have been less well enforced. An absent neighbour or a vacant plot might offer an irresistible temptation to adjust a boundary in the remaining resident's own favour.

The area occupied by the residences of the canons of Glasgow Cathedral provides a useful example of ecclesiastical planning in an urban setting and contrasts well with the narrow burgage plots of a typical medieval high street. Excavations in 1980 on the west side of Castle Street, at the site of the Govan Manse (opposite the site of the Bishop's Castle), revealed an east/west aligned ditch c 1m wide, sealed beneath a later 17th-century building. Provand's Lordship, the only surviving pre-Reformation structure in Glasgow other than the cathedral itself, lies immediately to the south, and measures c 16.5m wide at the street frontage. The ditch, which lies a similar distance to the north of Provand's Lordship, may thus represent the northern boundary of the property on which the Govan Manse was built. If so, these plots of land are approximately three times wider than the average town plot of c 5m.

The variation in plot sizes within even a small burgh is clearly illustrated by several seasons of excavation between 1985 and 1990 at Rattray, Aberdeenshire. Rattray gained royal burgh status in 1563/4, but appears to have been a thriving baronial burgh during the 13th to 15th centuries. When the burgage plots were first laid out in the 13th century between the church and castle, they were 10m wide opposite the church, 6–11m wide south of the road and over 13m wide north of the road in the industrial area, some as much as 25 or 30m wide. In the 14th or 15th century, plots south of the road were amalgamated, with four or five plots being replaced by two larger plots of between 20 and 25m wide.

TOWN PLAN ANALYSIS: THE EXAMPLES OF PERTH & ST ANDREWS

Town plan analysis, a technique developed by historical geographers, is an extremely important tool in the study of the planning and growth of

medieval towns. The results can provide an essential research focus and framework for individual burghs, particularly for the earlier periods in a town's history when there may be few surviving records.

The neatly-ordered form of many medieval burghs is vividly brought to life by the earliest Scottish mapmakers. The cartographer's patchwork of houses with neatly-arranged plots and boundaries can appear schematic, but often belies the considerable accuracy of maps such as John Geddy's map of St Andrews (c 1580) and, some 50 years later, James Gordon of Rothiemay's maps of Cupar and St Andrews (1642), Edinburgh Old Town (1647), Old and New Aberdeen (1661) and Inverness (date unknown) (reproduced in Moir 1983; Wilkes 1991, 33–6). The burgage plots depicted on early town plans have proved invaluable to historical geographers. Conzen's (1960) seminal town plan analysis of Alnwick, Northumberland, established the guiding principles and terminology of historic town plan analysis, which were subsequently followed for towns across Britain. However, few detailed studies have been carried out on individual Scottish burghs: Ayr (Dodd 1972); St Andrews (Brooks & Whittington 1977) and Perth (Duncan 1974; Spearman 1988a). Essentially, the topography of streets, properties and buildings is used to distinguish progressively smaller divisions or blocks of land. The patterns formed by these various divisions define 'morphological periods', each of which can be further broken down into smaller 'plan-units'. The results can prove invaluable, both in understanding the development of medieval burghs, but also in formulating and testing a research design for further archaeological work. The identification of individual burgage plots can also be used to estimate population size and provides a vital link with the documentary sources – property registers, protocol books and sasines – and, in turn, with the people who lived there.

Two examples of town plan analysis which highlight the rewards of this approach are those of Perth and St Andrews. Both burghs are of the parallel-street system type. This is less typical amongst Scottish burghs of 12th-century foundation, which are more commonly of the single linear street type (a third type is the convergent plan where a number of streets meet at a focal point such as a market place or the gates of an abbey). Nevertheless, they represent two of only 12 parallel-street system burghs, nearly all of which lie around the Firths of Tay and Forth. Both towns were important centres but for very different reasons. Perth, situated on the lowest navigable crossing of the River Tay and close to the royal palace at Scone, quickly developed as a flourishing trade centre, drawing in raw and part-finished goods from a rich hinterland and shipping them to the Low Countries and Baltic ports. St Andrews, in contrast, was first and foremost the ecclesiastical capital of Scotland and this status, together with its role as a pilgrimage and educational centre, drove its economy. On detailed analysis, however, neither Perth nor St Andrews were products of a single plan, but rather products of many phases of growth.

In the case of St Andrews, analysis of the burgage plots has shown that the early settlement of *Kinrimund* influenced the form of the burgh, but that the whole settlement was replanned and laid out on a grand scale c 1150 by Mainard the Fleming, a burgess of Berwick. Four main phases of planned growth have been identified, with the first phase at the east end of the burgh comprising North and South Street separated by a narrow lane. This lane was then widened to form a third street, Market Street, and new plots were laid out to the west of the original planned settlement c 1170. These three streets were later extended westwards and more plots added between the 13th and 15th centuries. In the 15th or 16th centuries, suburbs were added and also the town ports (gates). The creation of Market Street as the new market place in the late 12th century is an important feature of the development of St Andrews as it raises the question of the location of the first market place,

thought to be at the junction of North Street and Castle Street. This is not a unique example: the market place at Ayr was shifted and that of Crail was also moved on two occasions.

At first glance, Perth looks like a classic grid-iron planned town, with two principal streets linked by a series of vennels. In fact, the surviving plan obscures a much more complex development with seven stages of growth attributable to the medieval period alone. Analysis of the burgage plot sizes has shown that the early focus of settlement probably lay along Watergate, with 16 plots extending down the slope from Watergate to the River Tay (Duncan 1974; Spearman 1988a). By the mid-12th century, there had been at least two major changes in the town plan, first with the establishment of Kirkgate and High Street, and then with the insertion of Skinnergate between the existing plots to provide a routeway between the burgh kirk and the newly constructed castle (this was swept away by a flood together with the bridge in 1209). The burgh had also expanded westwards (to Meal Vennel) in the 12th century and by this point 150 plots had been laid out and the whole settlement possibly defined by a boundary ditch. The next major addition to the town plan was the creation of South Street, followed by the westward expansion of the town beyond Meal Vennel. On reaching the Turretbrig and Southgate Ports, by at least 1336, there were some 370 plots. Like St Andrews (Argyle Street), Perth was one of the few burghs known to have had medieval suburbs (New Row and Castlegable). The suburbs represent a final stage in the development of the medieval burgh: both post-date the 14th-century town defences and probably date to the 15th or 16th centuries, although there may have been extramural settlement here prior to the plots being laid out. Suburbs such as these are likely to have contained fire-risk industries, grain drying and brewing for example. In time, this concentration of industry attracted artisans to settle here and suburbs became enclaves of craftworkers and their families.

PLOT BOUNDARIES

Given the ephemeral nature of many plot boundaries it is not surprising that there were so many property disputes (Torrie 1990, 53). Boundaries took a variety of forms, many examples of which survive in the archaeological record, including stone rows and markers, ditches and gullies, stone walls, wattle fences, pathways, lines of posts and pits, and midden heaps. The nature of backland use and the activities of immediate neighbours, are likely to have determined the type of boundary erected. If animals were being kept, for example, wooden fences would have been essential, while if crops were being grown a boundary ditch would have served as a convenient method of drainage.

In the archaeological record, ditches and gullies are the most commonly found boundaries and are the easiest to identify. On large open-area excavations – such as Canal Street II, Perth, where five contemporary plots and their boundaries, all in the form of gullies, were uncovered (illus 2) – it is clear from the variations in depth, width and profile that each property boundary was established by the respective plot holder. The dimensions and alignment no doubt were already surveyed in and marked out by the burgh liner. This particular excavation also showed how frequently these gullies were recut, often resulting in the marginal shifting of boundaries. There was evidently a certain amount of opportunism. No sooner had one plot boundary been dug, for example, than it was very quickly moved to create one larger and one much smaller plot, an opportunity probably provided by a temporarily vacant plot. Extensive, open-area excavation at the deserted burgh of Rattray, Aberdeenshire, uncovered parts of 14 plots marked out by a series of ditches of 13th- or early 14th-century date. When many of these ditches and gullies silted up, they were replaced in other forms.

Evidence for wooden fences is also commonly found. In most cases only the stake-

ILLUS 3 Castle Street, Inverness. A timber fence marks the edge of the medieval street

holes survive, but in some towns, where the soil conditions are favourable, the wattle hurdles, often hazel, also survive, as at several sites in Perth and Aberdeen. On street frontages, there is the added problem that stretches of wattle fence or lines of post-holes could also represent buildings as, in order to maximize the limited available space, building lines often doubled as property boundaries. At Castle Street, Inverness, a wattle fence marked the front of the plot but there was no actual building on the plot (illus 3).

There are also examples of fences set alongside ditches and paths. At Auction Hall, St Andrews, a stake-line had been set into the fill of an earlier ditch. At Star Garage, Montrose, a ditch marking a plot boundary contained the remains of a burnt wattle fence lying against the face of the ditch. At 45–7 Gallowgate, Aberdeen a wattle-lined boundary ditch was found with a fence that stood 0.3m above ground level. There was also a gully with fence at King Edward Street, Perth. Timber fences have also been found along the edges of paths at Castle Street, Inverness, and numerous sites in Perth and Aberdeen.

Gullies, which were shallow, narrow and quick to establish, were the preferred choice and have been found on numerous sites. There are, however, examples of more substantial ditches such as those at 42 St Paul Street, Aberdeen and Canal Street III, Perth. At both sites, two, parallel and seemingly identical ditches terminated at the same point and could represent adjacent plots under one ownership. Property boundaries in the form of upstanding banks are quite rare but there are a few examples: a bank of clay was found at 30–46 Upperkirkgate, Aberdeen; a second, of soil and rubble, was found at Loudon Hall, Ayr; another at 42 St Paul Street, Aberdeen; a gully which went out of use at Canal Street II, Perth was replaced by a raised turf bank which may have doubled as a path in what was apparently becoming an increasingly boggy area. A hawthorn hedge served as the boundary between the properties on St James Road/Castle Street, Glasgow and Blacader's Hospital in the 16th century (McBrien & Kerr 1985).

Stone walls were less common in the medieval period, but stone was used in other ways. At Lauder Technical College, Dunfermline, a row of rounded boulders was used to mark out one of the plot boundaries backing onto the abbey precinct wall. A similar boundary was found at Canal Street III, Perth. The use of stone walls for marking out property boundaries is generally thought to be a post-medieval feature, except where stone is more easily available as a building material. There are, however, some known examples. A stone boundary wall is documented for a property in St Andrews in 1348 (Ewen 1990, 14), while at Bridgegate, Peebles, prior to the building of the tolbooth in c 1400, a stone wall enclosed an area 17×21m. A stone building built against the wall was thought to be

a workshop. At Rattray, in Aberdeenshire when the original ditches silted up, they were replaced by drystone walls, stone rows or markers.

Often, later activity removes or obscures earlier boundaries. In such cases, the spatial arrangement of features within the plots can provide clues as to the position of the 'missing' boundary. Pits, whether for rubbish disposal, quarrying or cess, are common features of backlands and, when they are plotted, patterns emerge which indicate that they were being dug close to plot boundaries. Sometimes the pits themselves were the boundaries, as at 42 St Paul Street, Aberdeen, Canal Street III, Perth, and Chambers Street, Edinburgh.

Although medieval plot boundaries wandered to an extent, they remained remarkably permanent and many have survived to the present day fossilized in modern building lines. At College Goods Yard, Glasgow, the medieval plot boundaries which survived as wooden fence lines continued well into the 19th century, fossilized within the building lines of the tenements, even though many of the original medieval properties had been amalgamated. Plot boundaries at Castle Street, Inverness, and Kirk Close, Perth, also survived until the 1970s. At Broad Street, Aberdeen, the plot boundaries wavered as the general ground level rose, but by the 14th century the boundaries were fixed and remained so until the 1970s.

The absence of plot boundaries is also a useful indicator of the nature of certain areas within a medieval burgh. The plot boundaries at Meal Vennel, Perth, for example, did not appear, at least in the archaeological record, until the post-medieval period. Excavations here clearly demonstrated that this area was in use as an industrial zone from the 12th century to the post-medieval period and perhaps did not require formal property boundaries. Plot boundaries at Scott Street, Perth, similarly did not appear until the late medieval period and excavations here showed that before then this area was undeveloped and used as a quarrying and dumping site on the edge of the burgh.

BACK DYKES OR YETTS

Very few Scottish burghs were defended: Inverness had a ditch and timber palisade in the 12th century; Perth and Berwick had stone defences in the 14th century, Stirling, Peebles and Edinburgh by the mid-15th century. In lieu of town walls the back of the rigs (known as the 'back dyke' or 'heid dyke') formed the burgh boundary. Many burgesses had ready access to the surrounding burgh fields by way of a small back gate (or 'back yett') through the dyke, which led to a lane. As this gave access to grazing for their livestock it was often called a 'cowgate', as at Edinburgh and Dundee, for example. The back dyke was usually represented by nothing more than a ditch, bank or fence, and, although each plot holder was responsible for the maintenance of his sector, the dyke was often in a state of disrepair (Torrie 1990, 56). The back dyke was, however, an important feature of the townscape as it functioned as the first line of defence in times of war and pestilence, but also marked the limit of the burgh's jurisdiction and privileges.

Back dykes are quite rare in the archaeological record. Of the few examples, most are in the form of ditches such as at High Street/Shuttle Street/College Street/Nicholas Street, Glasgow, where a ditch separated the backs of High Street plots from the adjacent Franciscan friary. On one of the first urban excavations in Perth, at Marks & Spencer, an early ditch at the end of the High Street rigs is thought to have been the original town boundary in the 12th century, before the boundary was pushed back creating much longer plots. At 167–9 High Street, Ayr, a ditch may have marked the end of a rig; and at 42 St Paul Street, Aberdeen, there is also some evidence for rig ends, marked by ditches and a bank. The burgh boundary at Rattray was in the form of a ditch and a natural stream was also used as a boundary. In some burghs the heid dykes formed more substantial boundaries. The backs of the plots at Whithorn, in Galloway were demarcated by an earthen bank, for example. At

Illus 4 Back Dyke/Tanpit Lane, Kircudbright. The back dyke marking the end of the medieval plot is buried under garden soil

two sites in Kirkcudbright, Corby Slap and Tanpits Lane, stretches of rubble walls with an associated ditch were uncovered (illus 4). The differences in construction within the fabric of the walls would appear to be the result either of different techniques employed by respective plot owners or repair work over the years. At High Street, Edinburgh, the heid dykes backing onto Cowgate were later incorporated into the town's defences. Town walls and abbey precinct walls also provided a convenient opportunity to build lean-to structures. The King's Wall, Edinburgh, was built between 1425 and 1450, but by 1473 there was already a decree to pull down houses built against it.

Perth was one of the few walled towns in Scotland, and the relationship between the ends of the plots and the defences can be illuminating. At Canal Street III, the plot boundaries stopped short of the town ditch that formed the southern limit of the plots extending back from South Street. One interpretation was that this represented a communal walkway around the inside perimeter of the town defences, perhaps to allow troops to be deployed more quickly and efficiently. At Mill Street, Perth, part of a stone-revetted ditch at the end of the High Street rigs appears to have performed a similar function.

BUILDINGS

With the prospect of work, more and more people were attracted to live in the burghs and there developed an active market in urban property. Burgage plots were increasingly sub-divided into smaller and smaller plots, with poorer members of society living side by side with the richest burgesses on more or less the same small plot of land. This ordered social hierarchy is thought to have been reflected in the layout of the buildings contained within the burgage plot itself, with the burgess occupying the frontage, craftsmen and skilled artisans to the rear, and journeymen, labourers and, finally, the widowed occupying the backlands (Lynch 1992, 64).

The constructional detail and internal layout of medieval urban timber buildings are not considered in this paper but have been the subject of detailed study in their own right (Murray 1980; and below). Nevertheless, the location, spatial distribution and access arrangements of buildings, and how they functioned within the plot, are all of particular interest to this survey. The siting of a building, for example, can shed light on access arrangements and, therefore, indicate when the backlands were being sub-divided. The spatial relationship between buildings and the street frontage is also important. A building set back from the street frontage, for example, hints at the existence of a foreland, often a gravelled yard where a stall or booth may have been located.

Our present understanding of medieval timber buildings is largely derived from a group of sites excavated in Aberdeen, Inverness and Perth in the 1970s and early 1980s. Around 40 buildings of 12th–14th-century date from sites in these burghs have been studied by Murray (1980). In general, the buildings were rectangular on plan, the smaller buildings measuring 6 to 8m in length, the larger ones up to 15m. The widths varied between 3.5m and 4.5m, primarily determined by the width of the plot. The evidence suggests that buildings sited in the backlands lay at right angles to the street frontage, their long axes parallel to the long axes of the plot boundaries. Buildings sited on the frontage, however, appear to have been smaller and were more likely to lie with their long axes parallel to the street. These differences highlight the importance of the street frontage – maximizing shop-front exposure to the market place and combining workshop space with accommodation – and suggest a complex relationship between frontage and backland (Murray 1980, 44).

In Aberdeen, the buildings on Broad Street and Gallowgate frontages stood gable end to the street frontage and, in the case of the former, behind a foreland. In general, these frontage buildings were more sophisticated than their backland counterparts, perhaps supporting the suggestion that backland dwellers were tenants, or economically dependant in some way, of frontage owners (Murray 1982, 227). This appears to have been the case at 42 St Paul Street, where the frontage and backland were in the same ownership until the 16th or 17th century. Arguably the best known medieval backland timber building was that excavated at 42 St Paul Street, which has been reconstructed in Aberdeen Museum. It is not typical of its kind, however, as it stood within its own yard. The excavation uncovered five buildings of 13th-century date in the backlands of this part of Aberdeen, but only one or two of which are thought to have been in use at any one time.

One of the best preserved sequences of medieval timber buildings recovered from a single excavation site was revealed at Castle Street, Inverness. In total, 18 structures were found, with ten situated on the frontage, while more lay unexcavated under Castle Street itself, which had moved c 3.5m over the centuries. Of the 12 structures where sufficient detail survived, five had gable ends fronting onto the street and seven lay parallel with the street. Inexplicably, in all the buildings excavated, the hearth lay outside, except for one structure which was interpreted as a workshop. One plot in particular captures the essence of a medieval street frontage. On Plot A, the property appears to have been sub-divided with a building set back 5m from the street frontage and with a cobbled yard serving as a foreland. A second structure was then built onto the rear of the existing building. Only a common wall separated the building on Plot A from the neighbouring building on the adjacent Plot B.

At 80–6 High Street, Perth, the buildings all fall well within Murray's smaller buildings' category and, though not as well preserved as at other sites, seemed very flimsy structures more akin to workshops than domestic accommodation (Moloney & Coleman 1997, 777). A similar pattern was recorded at 75–95 High Street (better known as the Marks & Spencer site), almost directly opposite, where two successive and similarly flimsy structures were identified on the frontage. At this site, fences and walling of c 50 timber structures were uncovered, starting approximately 10m back from the frontage and extending for some 45m (illus 5). Situated at right angles to the frontage, they were accessed by a timber pathway and appear to have been used as stockpens, workshops, byres and storehouses.

At King Edward Street, Perth, four 12th-century buildings were identified on the High Street frontage. Again, all would fall within Murray's smaller buildings category, and one lay with its long axis parallel to High Street. This densely packed group of buildings, with associated yards and access paths, was set back

ILLUS 5 The 'Marks & Spencer' excavation, High Street, Perth (1977–8). This remains the largest urban excavation ever undertaken in Scotland. From left to right: Andrew Saunders, Chief Inspector of Ancient Monuments; Ian McIvor, Principal Inspector of Ancient Monuments; David Walker, Principal Inspector of Historic Buildings; Nick Bogdan, Excavations Director; Gordon Barclay, Central Excavation Unit; Linda Blanchard, Excavations Supervisor

some 4m from the present frontage, prompting a discussion as to whether this gravelled area represented a foreland or merely the southern edge of a wider High Street (Bowler, Cox & Smith 1995, 936–7). The answer seems to lie with a series of drains which ran through this area taking water from the front of the site into the backlands and suggesting that this area was indeed a foreland and part of the High Street itself. Other interesting features of this site included a gap between two buildings, possibly once providing access, which was merely roofed over to create a new building. Another building appears to have been open on one side, as no wall was visible there, with an internal pit. Again this arrangement suggests a workshop rather than living accommodation.

The Kirk Close, Perth buildings, thought to be 13th-15th century in date, lay some 15–20m back from the street frontage and provide a useful contrast with street frontage buildings. In comparison, they were generally of a higher quality, but there were differences in quality within the group itself. The three plots spanned by the excavation had initially been intensively used, but by the mid-14th century two buildings had gone out of use and were not replaced. One of the buildings had been constructed of oak with an

internal latrine. The building on the neighbouring plot, however, was of softwood and shared with animals. Another building, interpreted as a cobbler's workshop with living quarters and byre, was replaced with stone foundations and an industrial sized oven. The discovery of a macehead attaches considerable importance to this property; a macehead is considered a sign of office (a burgess's responsibility of 'watch and ward' or sentry duty) and its discovery questions the general assumption that the more prestigious buildings, perhaps those of the more wealthy burgesses, were on the street frontage and not in the backlands.

Although much of our knowledge of timber buildings stems from a handful of major sites (that is, those studied by Murray), buildings have been recovered from a number of other burghs such as Arbroath, Ayr, Elgin, Forfar, Peebles and St Andrews. Two timber buildings were found at Loudon Hall, Ayr, some 50m back from the street frontage, and two successive timber buildings were found at the rear of a plot at Castle Street, Forfar. At South Street/Abbey Street, St Andrews, a large timber building thought to have been built c 1180, was sited 13m back from South Street frontage and 8m back from Abbey Street frontage. The building itself was a minimum of 14m long and c 9m wide. A sequence of timber and stone buildings was found at another site in St Andrews, 106–8 North Street. Here, a 12th-century boat-shaped building had been built across two plots, some 12–13m back from the street frontage. At right angles to the street, it measured 12m long by c 5m wide and was succeeded by a second timber building in the 14th century and subsequently a stone building in the 15th-16th centuries.

Stone, or partly-stone, buildings were once thought to be almost exclusively late medieval or even post-medieval in date, but there is a growing number of examples of buildings of this type from as early as the early 13th century. A rare opportunity to excavate three complete properties was afforded at Bridgegate, Peebles. Here, a sequence of five early stone buildings of the 14th-15th centuries, one of which was the tolbooth, was built on an area previously used as dump; as at Castle Street, Inverness (above), much of the actual medieval frontage still lies under the modern road, illustrating how alignment and widths of roads have changed over time. The quality of the buildings suggest they were merchants' or burgesses' houses. One building had workshops on the ground floor, with an intra-mural passage between the rooms and accommodation on the first floor above. The central of the three plots lay vacant until around 1400 when a two-roomed single-storey building was erected. Unlike the other buildings, this lay gable end to the street frontage.

A stone building was also found at Marketgate/Ladybridge, Arbroath. Thought to be a wealthy merchant's house, it seems to have been built around 1400. Three stone buildings were found at High Street, Perth, one situated on the frontage and thought to date to c 1300, but for the others there was unfortunately no secure dating. Three recent excavations in St Andrews, at Abbey Street, South Street and Argyle Street, have all produced stone buildings. The sites at South Street and at Argyle Street, a late medieval suburb, both produced buildings situated in the backlands, and both appear to have been industrial workshops containing hearths. The South Street building was at least 100m from the street frontage, at the very end of the plot close to a water source; it was substantial enough to support a second storey for accommodation. A similar type of building, possibly of mixed industrial/domestic function, at High Street, Dumbarton, was set back some 10m and at right angles to the street frontage. Stone buildings have also been recorded at Meal Vennel and Mill Street Perth, and Cuddyside, Peebles, all three backland sites.

ACCESS

The economic success of some towns, particularly those on the east coast during the

12th and 13th centuries, led to pressure on space and to the development of the backlands. These were increasingly sub-divided and sold off or sub-let, a process known as 'infilling' or 'repletion'. As a result, access became a key issue and those who lived in the backlands were granted access to their property via the forelands. As a result communal pathways were established between plots close to or overlying earlier fences and ditches. Such pathways soon became property boundaries in their own right. Many of these communal pathways developed over time into the more permanent closes and vennels so characteristic of medieval towns, connecting the main streets with the back lanes. Normally, these vennels would have been communal but there are examples of vennels being wholly contained within an individual property, as at Elgin (Ewen 1990, 14).

At 45–7 Gallowgate, Aberdeen, an early property boundary was replaced as a vennel sometime between the 15th-16th century and by the 19th century with an internal covered passageway, known as a 'pend'. A wattle boundary fence was also replaced with a pend at 45–75 Gallowgate. In many other Aberdeen sites, access was by lanes running alongside plot boundaries. Sometimes these paths were cobbled, as at 42 St Paul Street, Castle Street and 45–7 Gallowgate.

It is clear that plots were being reorganized in order to accommodate new means of access. Sometimes the means of access itself is not visible in the archaeological record but the knock-on effect of its insertion into the existing town plan is. For example, at Canal Street II, Perth, the plots were reorganized only a short time after they were first established, all the property boundaries moving c 1m, probably to allow the insertion of a vennel close by. As many of the closes and vennels in the burghs are difficult to date, and their names often changed over time, features sealed beneath them are useful in providing a *terminus post quem* for their creation. The line of Old Vennel, for example, was found during the excavations at College Goods Yard, Glasgow, and it appears to have been a later insertion into the town plan as a pit lay beneath it. The pottery contained within the pit was dated to the 14th century and perhaps indicates a date for the creation of Old Vennel itself. Similarly at 88–94 High Street, Forres, two intercutting pits, one with 13th-century Stamford Ware, were found sealed beneath a vennel running off High Street. Excavations at High Street, Edinburgh, also provided evidence for the evolution and development of two closes through the medieval period, Cant's Close and Dickson's Close. The excavation at 45–7 Gallowgate, Aberdeen, was confined to a pend opening on to Gallowgate itself but yielded a fascinating history of a single property boundary. Respected by numerous timber buildings over the centuries, it was replaced in various forms until in the late medieval period it developed into a cobbled vennel and, finally, an internal passageway in the 19th century. In contrast, excavations at Scott Street, Perth, hoped to trace the development of Candlemaker's Close. However, it did not appear in the archaeological record until the post-medieval period.

PATHS

Pathways can be difficult to identify in the archaeological record except where they were surfaced, and even then can be confused with yards. Gravel pathways were the most common but cobbled, stone and timber paths have also been found. At Kirk Close, Perth, a gravel path was laid down the side of one plot, serving an adjacent building. It continued in use for much of the medieval period and appears to have belonged to one plot originally before being widened and becoming communal to adjoining plots. At Canal Street II and III, Perth, of the paths found, some were communal and others were wholly contained within individual properties. A similar picture emerged at 80–6 High Street, Perth. Whether these were merely garden paths or evidence of the sub-division of the backlands is often difficult to distinguish.

ILLUS 6 Mill Street, Perth. The cobbled road

Although gravel paths are most common, and were no doubt cheap and quick to construct, considerable effort went into some pathways, as at Marks & Spencer, Perth, where the boggy conditions required something more substantial. Here, a wattle path was laid down c 1150 which led through the backlands to various buildings, workshops, byres and storehouses. At 42 St Paul Street, Aberdeen four irregular plots were laid out c 1200. In the early 14th century these plots were reorganized to create more regular sized plots with a cobbled path between the two central plots. In the 15th-17th century, these were amalgamated and the path lost. Some paths were wide enough to function as roads or public routeways within the town. One path at Kirk Close, Perth, was wide enough for carts and led from High Street into the backlands, directly to a bakery. At Mill Street, Perth, a roadway, with associated drainage and a timber fence along one side, led from High Street into backlands and had been constructed over an earlier ditch and stone wall (illus 6). At Garden Street, Newton, Ayr there was a possible path leading to and from the riverside.

SUB-DIVISION OF PLOTS

The internal sub-division of plots, by gullies and wattle fencing for example, can indicate separation of different functions within the burgage plot – including kitchen gardens, stock pens, rubbish disposal or workshops – or that the plot itself may have been sub-let or sold off. At the Marks & Spencer excavation, Perth, eight plots were identified, two of which had been amalgamated by 1300. The plots remained intact until the 17th century from which point they increasingly became sub-divided. A number of gullies either marked internal plot divisions or drainage systems.

Yards are common features of burgage plots, often filling in spaces between buildings. Usually represented by gravel surfaces contained within fences, they were used for a variety of purposes including stock-pens, midden heaps and as working spaces for crafts. To keep them dry they were often served by drains. Yards defined by fence-lines have been found at Garden Street, Ayr. A gravel yard at Canal Street III, Perth was served by a drain. Yard areas were also identified at Loudon Hall, Ayr, and at 42 St Paul Street, Aberdeen.

One of the most common sub-divisions is on the street frontage itself, an area often referred to as the foreland. Here, booths or stalls were erected, and from the excavated evidence craftwork and other semi-industrial work was being carried out in full view of the buying public. Forelands have been identified at a number of sites but, again, because they were often gravelled, they can be confused with street levels. If the foreland was not surfaced, then the siting of buildings some distance back from the frontage is another clue to the existence of a foreland, but wider streets in the medieval period again have to be taken into account. On one plot at Castle Street, Inverness, the building was set back some 5m from the street frontage;

the foreland area was later re-amalgamated within the plot. A similar pattern emerges from numerous sites in Perth, such as King Edward Street and 80–6 High Street, and at North Street, St Andrews, where structures were sited some 6m back from the frontage.

At Broad Street, Aberdeen, forelands were marked out by walls and lines of single-course stones. Most forelands appear to have been gravelled, but some as at 77–9 High Street, Arbroath, and 44–7 Gallowgate, Aberdeen, were cobbled. Often the structures situated on the frontage appear flimsy, and what could be taken for domestic accommodation may merely be workshops or booths. The flimsy nature of the frontage buildings at 80–6 High Street, Perth, suggests they were workshops. On the same site, large pits were also being dug on the frontage, though these often coincide with the absence of any frontage structures, including booths. A similar picture emerges from excavations on the opposite side of High Street, at the Marks & Spencer site, where forelands with large pits were recorded.

At 32 Castle Street, Montrose, there appeared to be yards with hearths on the frontage rather than buildings. Similarly, at 42 St Paul Street, Aberdeen, the frontage was used as a yard in the early 13th century after initial boundaries and buildings had gone out of use. At 45–7 Gallowgate, Aberdeen, the frontage was not built on but instead was occupied by open yards, some with cesspits.

VACANT PLOTS

There is documentary evidence to indicate that there were vacant plots in towns, much as there are today. Many sites are likely to have been vacant at some time in their history, particularly during the period from the mid-14th to the mid-15th century, when a series of plagues may have reduced the urban population by at least 20% (Lynch 1992, 71–2). A number of excavations have also shown that before the first boundaries were established there was already activity of one sort or another on the properties. Whether such plots were lying vacant with boundaries marked out by the burgh liners but not yet occupied, or whether the boundaries had not yet been established is not clear. Activity pre-dating the plot boundaries, thought to have been laid out in the 13th-14th centuries, was identified on all three Canal Street sites in Perth, for example. The earliest features identified on these sites included possible timber structures, cultivation marks and numerous pits, yet this part of the burgh (South Street) is thought to have been developed by the late 12th or early 13th century. One indicator of a vacant plot may be the opportunistic dumping of rubbish, or quarrying; at Broad Street, Aberdeen, for example, where the building on the street frontage had been demolished and rubbish dumped as the plot became vacant. Both the major excavations that have taken place in Peebles – at Bridgegate and Cuddyside – identified dumping before development. As this land lay close to the river, it may have been deliberate land reclamation rather than sporadic dumping on vacant plots. Even when three plots had been laid out, the central of the three lay vacant while adjacant plots were built on. Dumping was also evident at 45–7 Gallowgate, Aberdeen, prior to development. Three sites in St Andrews appear to have been vacant for long periods: Cinema House; 3 & 7 South Castle Street; and North Street, the latter not developed until the 19th century.

FEATURES WITHIN BURGAGE PLOTS

MIDDEN, PITS, LATRINES & DRAINS

There are few references in the documentary sources to sanitation, but the responsibility for rubbish disposal and keeping the streets clear appears to have lain with burgh officials (Ewen 1990, 22–3). Rubbish, in the form of midden heaps, was often dumped on the street, in the town ditch and other convenient places, but

ILLUS 7 Canal Street I. A large quarry/rubbish pit

the sheer number of pits found on excavated sites, filled with domestic and craftworking debris, indicates that much was merely buried on the burgage plot. Whether the Black Death in 1349 led to an increased awareness of the need for hygiene, resulting in the formal removal and dumping of rubbish outside the burgh for example, is not clear but has been suggested as one reason why late medieval levels are less well represented by artefacts and other inclusions at the Marks & Spencer site, Perth (Bogdan 1992).

Rubbish pits were commonly sited in the backlands but, as we have seen already, large rubbish pits have also been found on the frontage. If the backlands were occupied by the poorer sections of burghal society, this is not generally reflected in the nature of the finds retrieved from rubbish pits. The broad range and high quality of finds suggest that many of the rubbish pits in the backlands were either communal – used by households rich and poor – or that rubbish was being transferred from the richest households, living on or near the frontage, to the backlands.

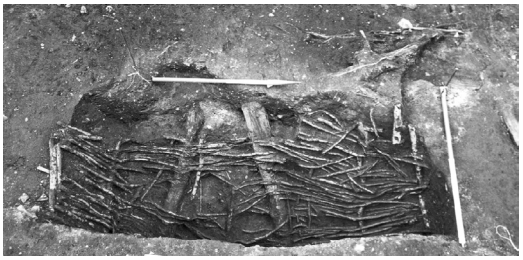
Midden spreads also commonly ignore property boundaries, which suggests they too were communal features (or that the adjacent plot was vacant). It has to be borne in mind that the nature of the rubbish that survives in the archaeological record, particularly food remains, has probably been much altered as pigs, dogs, cats, vermin and foxes feasted on it. Only in anaerobic soil conditions does the full range of the contents of midden heaps survive and, therefore, much of our knowledge stems from waterlogged riparian sites in Perth and Aberdeen.

PITS

Pits were dug for a variety of reasons but their re-use over time often makes it difficult to identify their original function. For example, what started off life as a quarry pit, dug to extract sand or clay for floors, was commonly re-used as a rubbish pit and may then have been used as a cesspit before being capped and sealed. The most common type is the simple rubbish pit, typically filled with household refuse such as food remains, broken pots, plates, bowls and kitchen utensils, worn clothing and shoes, broken tools or even toys. Rubbish pits commonly contain the waste debris from workshops and often yield the most useful evidence of medieval craftworking and industrial activity. Other types of pits include quarry pits, cesspits, wells, waterbutts, storage pits and industrial vats (illus 7).

Most sites where large-scale excavations have been carried out produce a broad range of pits, such as College Goods Yard, High Street, Glasgow, where rubbish pits, cesspits, wells, and quarry pits were well represented. The sheer number of pits that were dug on a medieval property is, perhaps, best illustrated by excavations at the Marks & Spencer site, High Street, Perth. Here, 140 pits were uncovered during the excavation, the site so riddled with pits that over time subsidence was a major problem even for structures built in the medieval period.

Pits along the Meal Vennel frontage in Perth were used specifically for the disposal of industrial and craftworking waste during one phase of activity while pits further back

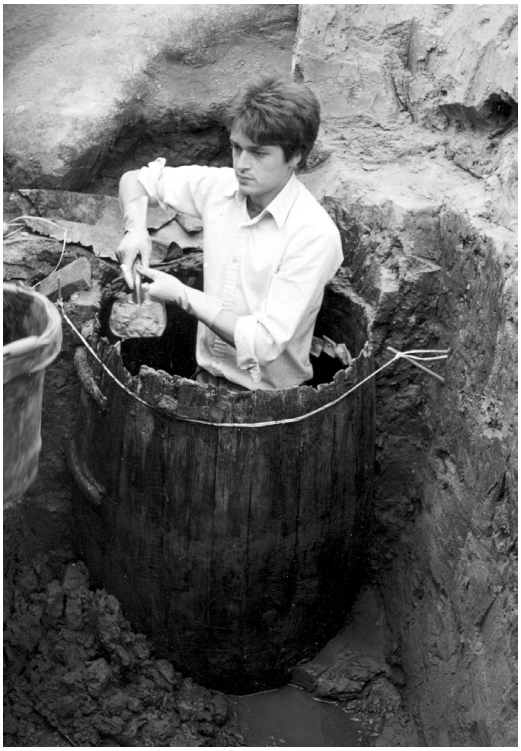


ILLUS 8 King Edward Street, Perth. A pit capped with a wattle lid

were for domestic refuse. Similarly, at 80–6 High Street, Perth, the establishment of a large number of pits on and near the frontage, filled with both domestic and craftworking waste, appeared to coincide with the absence of any associated structures domestic or industrial. At 42 St Paul's Street, Aberdeen, domestic settlement was replaced in the early 13th century by rubbish pits, cesspits and midden spreads; the number of rubbish and cesspits, in addition to extensive spreads of midden, then doubled after the plot boundaries had been reorganized c 1300.

Not all sites produce pits. Very few rubbish pits were found at Rattray, for example, which suggests that rubbish was being spread directly over the adjacent fields. Castle Street, Inverness, is an example of a major burgh where very few pits were found, and of those virtually all were on the frontage, very few in the backlands.

Quarrying is often one of the earliest recognizable forms of activity on many excavated sites. Examples include Marks & Spencer, Perth, 77–9 High Street, Arbroath, Canal Street III and Scott Street, Perth, Castle Street and 45–75 Gallowgate, Aberdeen. Some quarrying activity was more intensive, while in other cases a small pit was probably enough to provide enough sand or clay for a floor. A quarry pit in the centre of the backlands at 134 Market Street, St Andrews, for example, was so large it had two steps cut into it for access. Similarly, a rough step was cut during quarrying in the frontage of North Street, St Andrews.



ILLUS 9 Scott Street, Perth. A barrel-lined pit or water-butt

Pits that were lined with wattle, which would only survive in the right soil conditions, may have been used as storage pits. Possible storage pits have been found on a handful of sites including; Canal Street I, Perth; 30–46 Upperkirkgate; and 42 St Paul Street, Aberdeen, the latter with a hurdle capping or lid (illus 8). A large pit, clay-lined rather than wattle-lined, was found to have been filled with cereal grain at 134 Market Street, St Andrews.

Well shafts and pits could also be wattle-lined or barrel-lined (illus 9). Wattle-lined well shafts have been found at Meal Vennel and Canal Street III, Perth. The former may have been a water tank associated with a metalworking complex, as an overspill gully led from it. Barrel-lined wells have been found at Scott Street and Marks & Spencer in Perth and High Street, Elgin. What was thought to be two waterbutts were found at 42 St Paul Street, Aberdeen.

MIDDEN

Middens contain much the same material as the rubbish pits described above, but seem to have a higher content of animal dung and straw. This would have been collected from adjacent yards or from byres. It was often deliberately stockpiled for collection by the relevant burgh official, to be spread as fertilizer in the outlying fields, but was also spread in the backlands for the same purpose. Middens can be found in small spreads close to a household, as more extensive spreads which often ignore plot boundaries, and in the extreme it can be found as massive dumps in specific parts of certain towns. Middens survive particularly well in Perth and Aberdeen due to the prevalent soil conditions but have also been identified in other burghs such as Edinburgh, St Andrews, Ayr, Forfar, Montrose, Peebles, Inverness and Dumbarton.

One of the first urban excavations to have been carried out in a Scottish burgh was at St Anne's Lane, Perth, in 1975 (Thoms 1982, 437–54). No buildings or structures of medieval date and few features were discovered in this backland site between High Street and South Street, but the survival of extensive midden spreads 2.5m deep highlighted Perth's considerable potential for the preservation of organic deposits. The most extensive midden dumps to be found in a Scottish burgh, however, are probably those at the rear of the High Street properties (Cowgate) in Edinburgh. Established in the 15th century, Cowgate is built over midden dumps up to 10m thick. Midden material was also commonly dumped on streets themselves, a recurring problem in the medieval period, commented on regularly in documentary sources (Torrie 1990, 85–6; Ewan 1990, 22–3). Excavations at Abbot's House, Dunfermline, found successive metalled surfaces laid down over extensive midden deposits on Maygate, which, like Cowgate, lay at the foot of a steep slope rising up to High Street.

Both east-coast and west-coast burghs, like Montrose and Ayr, suffered from the problem of windblown sand throughout the medieval period. In these burghs, midden material was often used to bind the soil together after an inundation, both for cultivation and to provide stability. In Montrose, backland sites as well as the High Street itself have deep and complex deposits of sand and midden material. These have built up over the centuries, sealing and preserving earlier archaeological levels in the process. Numerous backland sites in Ayr display a similar sequence.

Most midden spreads lay close to households. At Kirk Close, Perth, excavation uncovered a small group of tightly-packed buildings set within three plots some 20m back from the High Street frontage. The picture emerging from this site captures perfectly the atmosphere of a medieval town with extensive midden heaps, often spilling over onto the adjacent property, surrounding small buildings, workshops and stock-pens, with access provided by way of a network of gravel paths. More interestingly, the finds within these midden spreads suggest they were long-lived, some lasting several centuries.

Sometimes, whole plots appear to have been given over purely for dumping midden, as at Queen Street, Aberdeen, during the 14th century. Although this may indicate lack of pressure for land, it may also represent opportunistic dumping on a vacant plot. When an area previously in use as a midden dump was being re-occupied, spreads of sand were often laid down in order to keep the smell down and to stabilize the ground presumably easier to achieve than removing the midden itself. Extensive sand layers sealing middens were found at two sites in Aberdeen: 45–7 Gallowgate and 42 St Paul Street.

CESSPITS

In the right conditions, the contents of cesspits are an invaluable source of information on diet and living conditions in a medieval town. Usually, cesspits were sited away from

ILLUS 10 Mill Street, Perth. A large cesspit

buildings, but internal latrine pits have been found at Kirk Close, Perth (complete with grafitti-covered toilet seat), and at High Street, Edinburgh. They can be stone-, timber-or clay-lined, which suggests they were cleaned out regularly, and can be served by complex flushing systems (illus 10). As with many other types of pit, they were often dug for one purpose and re-used for another. At High Street, Elgin, four plots complete with wattle fences were uncovered together with 30 well preserved cesspits. Two possible cesspits were found at Loudon Hall, Ayr: one was clay-lined with a surrounding fence for privacy, while the other appears to have been stone-lined. At 42 St Paul Street, Aberdeen, there was a stone-kerbed cesspit and another with stones in the base as soakaway. At Castle Street, Inverness, a timber-lined cesspit found close to the frontage was also used as a rubbish-pit. Cesspits were also found within yard areas on the frontage of 45–7 Gallowgate, Aberdeen. At Canal Street I, Perth, a stone-lined cesspit in the backlands was flushed by a drain with a sluice and served a late medieval stone building which lay across the former plot boundary. Similarly, in the backlands of North Street, St Andrews, a cesspit was fed by a stone drain. A group of pits found at Scott Street, Perth, appears to have been part of a complex sanitation system dated to the 14th or 15th century.

DRAINS

Drainage systems often served entire plots, some doubling as plot boundaries. Often it is difficult to determine whether some gullies were drains or internal property boundaries, as was the case at Rattray, Aberdeenshire. A drain at Kirk Close, Perth, served a gravel path and yard area as well as the adjoining property. At Castle Street, Inverness, two drains channelled excess water from the plot out into the street. A water channel was also found at High Street/College Street/Shuttle Street/Nicholas Street, Glasgow. Some drainage systems were more elaborate than simple gullies, such as stone box drains like those found at St Paul Street, Aberdeen, and at Canal Street II, Perth. Wattle drains are also known from 45–7 Gallowgate, Aberdeen. Gullies with additional sumps cut into the base have been found at King Edward Street, Perth, and at 42 St Paul Street, Aberdeen.

CULTIVATION

A distinctive feature of medieval backlands is the presence of a rich, dark, homogeneous loamy soil often referred to as ‘garden soil’. In some burghs, such as St Andrews, these deposits can reach 2m or more in depth. There is often little to distinguish the lower deposits from the upper deposits, except that they become progressively darker in colour towards the top. These soils may be the product of centuries of constant manuring or may represent large quantities of midden deposited in aerobic conditions and which subsequently decomposed to form organic soils. It has also been proposed, that soil was being deliberately brought in to the burgh for urban agriculture during periods of economic recession. Recent excavations at the Byre Theatre, St Andrews offered an opportunity to study the structure of these soils in detail (Carter 2001). The study concluded that these soils are the product of the continual building and replacement of buildings and structures with turf walls and roofs. As such, the ‘garden soils’

of towns like St Andrews are more akin to the 'dark earth' of late-Roman to medieval date in towns in England and indicate flourishing and intensively occupied settlements rather than towns in recession (ibid, 91).

Like quarrying, cultivation was often one of the first uses to which a burgage plot was put, pre-dating even the formal laying out of the plot boundaries. The earliest, medieval phase of occupation at 50–8 Broomgate, Lanark, comprised light cultivation at the rear of the plot. In the late medieval period, there was further cultivation, and the cutting of a series of drainage ditches or planting beds. A similar picture emerges at Lauder Technical College, New Row, Dunfermline, where cultivation furrows predated the laying out of the plots. In fact, one of the two plots examined during this excavation was used solely for cultivation throughout its history until relatively recently. Cultivation in the 13th century also pre-dated plot divisions and buildings on Castle Street, Inverness.

Occasionally, there are reminders of what the land was like before the plots were laid out. At 42 St Paul Street, Aberdeen, prior to the formal laying out of the boundaries, the area was in rough pasture. In the early 13th century, the south end of one plot was still under grass. At the Marks & Spencer site, Perth, tree stumps were uncovered in the backlands. Evidence for ploughing rather than spade cultivation was found at Queen Mary's House, South Street, St Andrews despite the restricted area available for cultivation or for turning the horses or oxen (Whittington et al 1976). The authors suggested that the site may have been ritually cleansed as was the tradition after a household had been afflicted by plague or the occupants had been involved in a treasonable act (ibid, 116). At Irish Street, Dumfries; Castle Street, Inverness, and sites around The Green, Aberdeen, garden soil was found to seal Mesolithic occupation. At Blackfriars House, a site within a medieval suburb of Perth, cultivation also pre-dated the plot boundaries. At Canal Street I, the rear of a South Street property in Perth, first occupied in the 13th century, the area continued in use until the 16th century as gardens, orchards and midden dumps.

Often land previously occupied by buildings and other structures, or used for other purposes such as industry, subsequently reverts to cultivation. In some cases, large areas appear to have been turned over exclusively to cultivation. At Canal Street III, Perth, pit digging was succeeded in all three excavated plots by cultivation in the mid-14th century. Extensive and deep horizons of garden soil at Star Garage, Montrose, for example, sealed earlier plot boundaries; at Greens Playhouse, Dundee, thick dumps of garden soil sealed earlier pits and a well; and at Castle Street, Forfar, cultivation soil sealed timber buildings at the rear of the plot in the late medieval period. At Garden Street, Newtown, in Ayr, garden soil sealed previously intensively used properties with buildings, yards, paths, and plot boundaries of late medieval date. A similar picture emerges from Loudon Hall, Ayr.

At Cinema House, St Andrews, a series of furrows shows the site had been turned over to cultivation in the 16th century, sealing earlier industrial features. Interestingly, the plots had been ploughed across their width (east/west and not down their length (north/south). A similar sequence of events can be seen at 134/120–4 Market Street, St Andrews, and at both Mill Street and Meal Vennel, Perth, where garden soil sealed a complex of grain-drying kilns.

CRAFT-WORKING & INDUSTRY

Early documentary sources, such as the Exchequer Rolls, reflect the monopolistic economy of the burghs; that is control (enshrined in charter) over the export of wool, woolfells and hides with raw and part-finished goods being channelled from a wide rural hinterland into the burgh markets. Although other documentary sources, such as craft or trade guild records,

identify the occupations of the more prominent members of burgh society, archaeology is invaluable in providing a more balanced picture of the local economy, particularly for the first three centuries of burgh life for which there are few surviving records. The archaeological evidence so far indicates a diversified local, often seasonal, economy where very little went to waste, and for every specialist merchant or craftsman there may have been another who could turn his hand to what ever was in demand at any particular time. Much of the evidence for medieval industry comes from the backlands of burgage plots and as much from the contents of rubbish pits as from intact structures such as kilns, ovens and tanks. The archaeology of industry is also one aspect of burgh life to have been studied in some detail (eg Photos-Jones & Atkinson 1998; Spearman 1988b, 132–47).

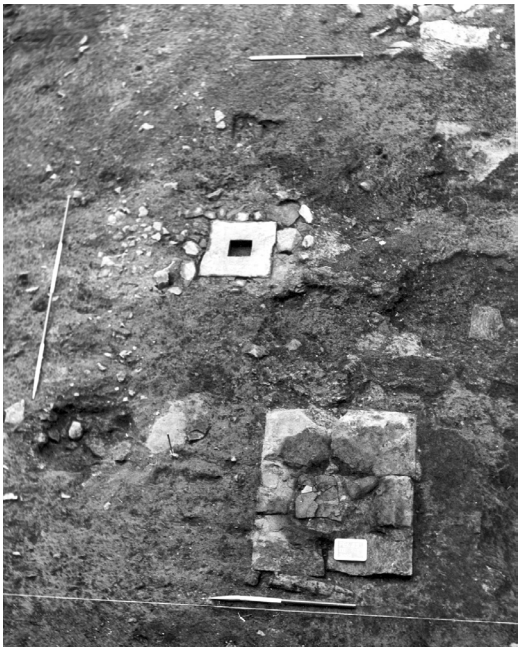
As people lived and worked on the same, small plot of land, domestic and industrial needs became integrated, with houses, workshops and byres co-existing to such an extent that, in the archaeological record at least, they often appear indistinguishable from each other. Accommodation for apprentices, working for a burgess or master craftsman, or skilled artisans renting property, may also explain some of the internal sub-divisons within the backlands.

The backlands became a focus for the more noxious and fire-risk industries such as tanning and smithing. Other crafts, such as boneworking and woodworking are probably more likely to have been carried out close to the street frontage in full view of potential customers. The transition from raw material to finished product can be broken down into several specialized tasks or stages, all or most of which would be carried out by different people in different locations. Clothmaking, for example, involves combing, carding and spinning, dyeing, fulling, waulking and weaving, not to mention the farmers and tailors at the beginning and end of the process. Similarly, leatherworking involves barkers, tanners and cordiners. There is little evidence to suggest single-industry towns but instead a wide range of trades and crafts were being practised in most burghs (Ewen 1990, 26). There is also evidence, street names for example, to suggest that there was a tradition of certain trades being practised in specific parts of a burgh for many centuries – Skinnergate, Fleshers Vennel, Meal Vennel and Horn Vennel in Perth, Dyers' Close in Dundee and Smithrow in Aberdeen, for example.

SMITHING

A recent study of several sites in medieval Perth which were interpreted by their excavators as smithing sites produced some important results (Photos-Jones & Atkinson 1998). Structural and artefactual evidence from three sites in particular, at Meal Vennel, Canal Street II and King Edward Street, were re-examined to establish whether iron was being smelted in the burgh or being brought in from rural bloomeries. The hearths found at King Edward Street were found to be domestic in function and had not been used for metalworking. At Canal Street II there was clear artefactual evidence for bloomery smelting, bloomery smithing and iron-making with combined use of charcoal and coal but no structures. At Meal Vennel, there was evidence both artefactual, including 44 knives, and structural for all three processes at what must have been an early industrial zone (illus 11). Metalworking was in operation throughout the medieval period, often in conjunction with other small-scale industries such as grain-drying, leatherworking and hornworking, continuing well into the post-medieval period. The structures represented included numerous hearths, some with windbreaks, yard areas, water tanks and a socketed anvil base.

In summary, the Perth smiths far from being reliant on their neighbours for procurement of raw materials, iron or steel were most likely to have been independent and in a position to experiment and make to order tools, equipment and other items on a small scale. Operating from small bloomeries in the backlands, they had the



ILLUS 11 Meal Vennel, Perth. This area on the western edge of the medieval town was used for industry and craft-working. The base for an anvil and the base of a hearth (foreground) can be seen in this photograph

expertise and technology to carry out the full cycle from bloom to finished artefact.

Metalworking has been identified at a number of other sites, the evidence ranging from hearths and furnaces to waste debris in rubbish pits. At Rattray, Aberdeenshire, the core of the settlement is thought to have been divided into two zones: a domestic, residential area south of the road and an industrial zone to the north of the road. In the industrial zone, a potting tenement and a metalworking workshop were discovered either side of a natural stream. On one bank of the stream, a circular kiln or furnace and large quantities of metalworking debris indicate ironworking in the 13th century continuing into the 14th and 15th century.

Smithing was tentatively identified at Cuddyside, Peebles at the end of the plots close to the river and also on the frontage of 77–9 High Street, Arbroath. A metal-casting workshop, with clay moulds, was found at 45–7 Gallowgate, Aberdeen. Metalworking waste was also found in pits at Castlegate, Lanark, and a bowl furnace and slag were recovered from other sites in the town. Furnaces and other industrial features were found at Burgess Street, Leith. At least four furnaces were found at College Goods Yard, Glasgow, in the backlands of High Street plots together with a number of broken rotary hones which suggest a blacksmith's workshop. Stone furnaces were found in adjoining plots behind the buildings on Castle Street, Inverness, and on the frontage itself, a hearth and quenching trough. No metalworking structures were found at Marks & Spencer, Perth, but finds recovered included 30 brooches, five moulds and quantities of slag. A mould for making five different types of finger-ring was also discovered at 80–6 High Street, Perth.

Small-scale evaluations and watching briefs undertaken over the last few years along the north frontage of Market Street, St Andrews, have produced a growing body of evidence to suggest that this area may have been a metalworking zone. At 125 Market Street, for example, a row of three linear hearth-like features filled with slag were found sealed beneath deep deposits of garden soil. These features pre-date the creation of Market Street, probably in the late 12th century, and would originally have lain at the very rear of the plots extending southwards from North Street. At Auction Hall, Market Street, a large stone-lined furnace with stone floor was found, and at Cinema House, North Street, late 12th-century industrial features were found on two adjacent plots, including hearths. In the main, iron-working is predominant but copper-working was identified at both Canal Street II and Mill Street, Perth, while a pit at Castle Street, Aberdeen, was found to contain bronze-working waste.

OVENS & KILNS

Every burgess was allowed to have an oven on his land (Ewen 1990, 31). Virtually every excavated

site has produced small hearths which survive as shallow, clay-lined hollows in the ground, filled with superimposed layers of ash and charcoal. Identifying an oven in the archaeological record, given that every burgage plot should have one, has proved difficult, however, and it is likely that ovens, hearths, kilns and furnaces have been misinterpreted by excavators in the past. Of the few ovens reported from excavated sites, one found at 42 St Paul Street, Aberdeen, had been built over a midden in the 13th century, but no other activity or occupation was identified on the plot. A second oven, from Kirk Close, Perth, was substantial enough to have been interpreted as a bakery rather than a purely domestic oven. It was situated within a room in a building set back some 20m from the High Street with a path wide enough for carts, leading from the building to the High Street frontage. The King James VI Hospital Rental Books (Smith & Spearman 1983) indicate that the Kirk Close area was occupied by bakers in the 17th century, a tradition which may have its origins in the 14th century. A third oven was found at the Marks & Spencer site, Perth.

Corn-drying kilns are much more common finds on backland sites, and the processes involved have been discussed on numerous occasions (eg Barclay et al 1982; Pollock 1985; Gibson 1988; Coleman 1996). Their function is not always clear, however, as kilns were used as both corn-driers and in the brewing process. Corn-driers have been found at 13–19 Roxburgh Street, Kelso; Bonnygate, Cupar; Murraygate, Dundee; Bank Street/Townhall Street, Inverkeithing; New Row, Dunfermline; 120–2 Market Street, St Andrews; and Forth Street Lane, North Berwick. All these features were open to the elements, but one recently recorded example was located within a building, possibly a workshop. At 106–10 South Street, St Andrews, the stone base of an oven-like structure was found within a stone building, set back some 100m from the street frontage. A complex network of drains channelled water into the building from the north and out to the south with a branch taking water into the room with the oven. Environmental analysis of soil samples from the hearth indicates grain-drying, but the oven, which displayed three distinct structural phases, may have been built for another purpose, and the water supply suggests brewing.

Sometimes, kilns are found in association with other features or in groups which indicate a more industrial scale. At Loudon Hall, Ayr, a clay-bonded stone-built kiln was found in association with a clay-lined water tank. A group of kilns was found at Mill Street, Perth. Here, of the four kilns, probably only one was in use at any given time. The three clay-lined kilns were operated at low temperature, and were used for drying grain. The fourth, a cobbled floored kiln, which was much more intensely scorched, was being used to make lime from animal bone, possibly for use in the tanning process. At Meal Vennel, Perth, a site perhaps best known for its long tradition of metalworking, the first industrial activity on the site started with a group of clay and wood grain-drying kilns.

In the industrial zone at Rattray, Aberdeenshire, a potting tenement lay on one bank of a natural stream, opposite a metalworking workshop. The potting complex, dated to the 13th century, comprised three kilns and a workshop, and a series of pits, one of which is thought to have stored the clay. By the 14th century, the three kilns had been replaced by one large kiln flanked by drainage gullies.

BREWING

Drinking ale was an essential part of medieval daily life as the water supply was often so polluted that clean drinking water was hard to find. Brewing implements also constituted some of the goods that burgesses could leave to their heirs (Ewen 1990, 31). Brewing, and the selling of ale, was often carried out by women (Torrie 1990, 93). Ale would have been brewed for personal consumption as well as on a commercial scale, as indicated by finds from a number of sites in burghs. Two brewing

operations have been identified in Perth. At 29–30 South Methven Street, a late medieval suburb, a clay-lined hearth and a plank-lined pit located within a building were found in association with an external water gully and large amounts of grain. A second brewing complex was found at Canal Street III, comprising a large clay-lined steeping vat, known as a coble, and a grain-drying kiln. Malting, the first stage in beer and whisky making, was also one of the few sources of sugar; honey, and fresh fruit in season are the others.

TANNING

Tanning (also tawing), one of numerous trades associated with the leatherworking industry, was also one of the most noxious, and there were many complaints concerning leatherworkers polluting water supplies in the medieval period. During tanning, hides had to be soaked in pits containing solutions of lime and water before the hair and fat could be scraped off (Crossley 1990, 219–20; Steane 1984, 247–8). They were then soaked in a solution of water and bird droppings or dog dung to soften the skin, before being immersed in oak-bark and water for up to a year (tannin in oak and other plants inhibits bacteria, and stops the leather rotting), hence the smell and the siting of this particular industry on the outer limits of burghs. Access to running water was essential as the various solutions had to be changed regularly and made to different strengths. Tawing was a slightly different process and required skins to be dipped in a solution of alum and then oiled.

Tanneries, usually identified by groups of clay or wood-lined, often inter-connected, pits, have been found in several burghs. A short-lived tannery was found at 45–75 Gallowgate, Aberdeen. Established in the 14th century, it was dismantled c 1400. Tanning pits were also found at Queen Street (Midden Area), Aberdeen, with a timber walkway providing access between the pits; also at Hamilton Street and Church Street, Inverness; Cinema House, North Street, St Andrews, and at High Street, Linlithgow. Tanning was an important industry in Linlithgow in the 17th and 18th century, and from the archaeological evidence possibly earlier, with a number of tanneries situated in the backlands on the north side of the High Street, close to the shore of the loch (Dennison & Coleman 2000). Tanning may also have been carried out at Marks & Spencers, Perth and 45–7 Gallowgate, Aberdeen, where substantial amounts of animal hair were recovered from rubbish pits.

Perhaps the best example of a medieval tannery was uncovered in St Andrews, close to the castle (Lewis 1996, 616–21). Established in the 14th century when the castle was in ruins, this large tanning complex was in use for only a short time. It comprised a series of rectangular tanks contained within a large open-sided shed c 30m long and at least 12m wide. The tanks, some up to 1.5m deep, were timber-lined with a clay base; overflows suggest they were used for washing the leather as it went through the various stages of defleshing. The roof was supported by huge timber posts and the open-sided design of the shed would have allowed hides to be hung in the rafters to air-dry.

LEATHER & BONEWORKING

Leatherworking and boneworking are usually represented by waste material in rubbish pits, such as trimmings and horn cores, but as this material only survives in the right soil conditions, much of the evidence comes from waterlogged, riparian sites in Perth and Aberdeen. A rubbish pit of 12th or 13th-century date excavated at Gallowgate Middle School, Aberdeen, is a good example of both the variety of material discarded in such pits and the sort of waste material left over from leatherworking and boneworking. The pit was found to contain over 50 boots and shoes, belt fragments, leather and antler trimmings and offcuts, in addition to moss rope and a flaxworking knife. Leatherworking waste was also recovered from 45–7 Gallowgate, Aberdeen.

At the Marks & Spencer site, Perth, pits yielded a total of 6000 leather offcuts. The presence of large numbers of worn shoe soles also suggests the presence of a cobbler's workshop nearby. Occasionally, waste material is found within buildings, as at Kirk Close, Perth, where leatherworking waste indicates the building doubled as a cobbler's or shoemaker's workshop. Other buildings, or rooms within buildings, at this same site were used for baking and in the production of vegetable oil, where flax was being processed or stored.

Pits filled with horn cores are a common feature and have been found at the Marks & Spencer site, 80–6 High Street, Scott Street and Meal Vennel, all in Perth. At the first, 1500 horn cores were recovered from pits. A number of rubbish pits and midden spreads at 80–6 High Street, contained largely waste material from craftworking with evidence for bone and horn working, leatherworking but also cat-skinning. Evidence for cat-skinning and dog-skinning can be found at other Perth sites such as Meal Vennel and Canal Street III.

THE ENVIRONMENTAL EVIDENCE

Catherine Smith

Evidence of cultivated plants has been found at urban sites of medieval date in Perth, St Andrews, Aberdeen, Elgin, Glasgow and Dundee. The botanical remains from these sites have been described by Robinson, Boyd, Fairweather, Fraser and Holden. Full references to these sites are shortened or omitted in the text, for the sake of brevity, but can be found in the botanical gazetteer (Table 2), below.

Cultivated plants found at these sites fall into the broad categories of cereals, vegetables (eg *Brassicas*), fruits, medicinal and dye plants. The cereals which were grown in medieval Scotland were principally oats, of both the white type (*Avena fatua*) and the grey or bristle type (*A sativa*). Evidence for the white oat is very common, and although the grey/bristle oat was absent from the samples at Marks & Spencer, Perth it has been identified at various other sites in Perth (for example Canal Street III, Meal Vennel, King Edward Street and Blackfriars House) as well as at 134 Market Street, St Andrews. The grey oat was probably the chief cereal used by the poorer people of Scotland; grains of this type found in the drains of Paisley Abbey were probably fed to horses rather than people, since the Cluniac monks were wealthy enough to afford imported wheat (Dickson 1996, 29).

Barley was also commonly grown in medieval Scotland, primarily to be fermented into ale. Bere barley (*Hordeum vulgare tetrastichum*) seems to have been the commonest variety in use at this time, and has been found at sites in Perth (Kirk Close, South Methven Street, Canal Street II, King Edward Street, Mill Street and Canal Street III), St Andrews (134 Market Street, Cinema House) and Aberdeen (Queen Street/42 St Paul Street) (Fraser & Dickson 1982, 241).

Rye, too was grown, and its remains have been recovered from latrines and cesspits at Kirk Close, King Edward Street and Mill Street in Perth as well as at 134 Market Street, St Andrews.

As noted above, wheat was not commonly grown in Scotland in the medieval period since it required a milder climate than the other cereals, thus the remains found at Queen Street, Aberdeen (Fraser & Dickson 1982), a latrine at Kirk Close, Perth, and at 134 Market Street, St Andrews, and College Goods Yard, Glasgow, may have originated from imported rather than locally grown grain.

However, although some of these cereal crops may have been grown in backland plots, there is so far no definite evidence that they were. The problem is really one of rig size: by definition, agriculture is carried out in open land, using a plough, while in contrast, gardening occurs in a smaller, enclosed space, using a spade or similar implement (Harvey 1994, 564). In the confines of a long, narrow town rig, there

TABLE 2
Gazetteer of excavated urban sites which have produced botanical evidence

Town	Site	Reference	Main Features
Perth	Marks & Spencer	Fraser & Smith, forthcoming	Midden spreads; dung layers
Perth	80–6 High Street	Fairweather 1997	Ditch fill, pits
Perth	Kirk Close	Robinson 1987a	Latrine deposits, middens, pits
Perth	South Methven Street	Robinson 1987a	Ditches
Perth	Canal Street II	Robinson 1987a	Industrial hearths, pits
Perth	Mill Street	Robinson 1995	Kiln, ditch, post-medieval cesspit
Perth	King Edward Street	Robinson 1995	Industrial hearths, midden
Perth	Kinnoull Street	Robinson & Lind, unpublished archive report	Ovens, grave fills, ditch
Perth	Kinnoull Street	Robinson & Whittington, 1995	Pollen analysis of ditch fill
Perth	Blackfriars House	Boyd, unpublished archive report	Ditch, hearths
Perth	Canal Street III	Fairweather 1996	Coble, kilns
Perth	Meal Vennel	Fairweather 1996	Kilns, hearths, floor surfaces
St Andrews	Cinema House	Robinson 1997	Cultivation slots, property boundary, latrine slots
St Andrews	134 & 120–4 Market Street	Boyd 1997	Garden soil, corn drier, wells, pits, ditch
Aberdeen	Queen Street	Fraser & Dickson 1982	Pits: 1 possible cesspit
Aberdeen	42 St Paul Street	Fraser & Dickson 1982	Yard build-up layer, cesspits
Elgin	26–8 South College Street	Robinson 1987b	Post-medieval cesspits
Dundee	Green's Playhouse, 106–10 Nethergate	Holden 1998	Medieval garden soil; well; pit
Glasgow	College Goods Yard	McBrien & Kerr 1985	Medieval and post-medieval pits
Glasgow	St James Road	Boyd 1986	Ditch fill

may have been insufficient room in which to turn an ox-drawn plough and hand tools would therefore have been required. In the north and west of Scotland, the *caschcrom* or 'crooked' spade was widely used for tilling, but elsewhere on the mainland, wooden foot-spades shod with iron were widely distributed from at least the 15th century onwards (Fenton 1976, 44–5).

There would have been no problem in growing green vegetables such as those belonging to the *Brassica* (cabbage) family. Indeed, the Scots term kailyaird, where cabbages and kail were grown, became synonymous with the kitchen garden. An analogous name for the peripheral gardens around towns in the Netherlands in the 15th century was the *koolhoven* (or *kooltuinen*), in other words, colewort (kail) or cabbage gardens (Zeven 1994, 604). One traditional method of growing kail plants, found in the Northern Isles, was in walled or turfed enclosures called *plantie crues*, which kept the livestock off (Fenton 1973, 4). In Scotland, the *Brassicas* all seem to have been referred to as 'kail', regardless of type, so it is difficult to know which species is meant. At any rate kaill or caill is the generic term for cabbages

which appears in documentary sources (eg Perth Guildry Book 1551: Stavert 1993, 408). Nowadays, kail can be used to refer to curly kale, cabbage or any soup or broth made from them, adding to the confusion (Fraser & Smith, forthcoming).

Other evidence for cultivation of *Brassicas* has included seeds – probably of the related turnip-rape or turnip – which have been found in Perth at Kirk Close (in significant quantities), South Methven Street, Canal Street II and Mill Street, and *Brassicas* of unknown species at Marks & Spencer.

Other vegetables which were suitable for small-scale cultivation in town garden plots were the legumes (peas and beans). Unfortunately, their seeds do not survive burial particularly well, and there is therefore less evidence of their use in Scotland. However, some seed-coat fragments occurred at Marks & Spencer, Perth and *pess* are certainly mentioned in the 16th-century Perth Guildry Book, although whether these were imported or locally grown is not stated (Stavert 1993, 236). Onion seed (*unyeon seid*), presumably imported from the Low Countries, is also mentioned (ibid, 69) and could have been raised within town garden plots. Evidence from the 15th-century drain of Paisley Abbey shows that either onion (*Allium cepa*) or leek (*Allium porrum*) was present (Dickson 1996, 29). Leek seeds were imported from England to Scotland in the 13th century (ibid).

Fruit trees may also have been grown around the garden plots. For example, stones of bullace, sloe/blackthorn and gean/wild cherry, members of the *Prunus* family, were all found at Marks & Spencer, Perth, while large numbers of *Prunus* stones were noted from excavations in medieval Elgin (Fraser & Smith, forthcoming). Bullace trees may have been planted deliberately, although they would also have occurred in the wild. Blackthorn, as the name implies, is a spiny shrub which could be planted as a hedge to deter livestock from eating growing crops. That animals were indeed a nuisance in the early towns is shown by various statutes passed, for example in Glasgow, banning pigs and geese from within the 'burgh roods' (Marwick 1911, 166). Seeds of hawthorn (*Cratageus monogyna*) another spiny, berry-bearing shrub, were found in the defensive ditch bounding a burgage plot at St James Road, Glasgow, perhaps indicating that it was not only animals that were unwelcome trespassers on the property. Sixteenth-century records relating to this site indeed confirm the existence of a boundary hedge (McBrien & Kerr 1985, 13).

Botanical evidence of other types of economically important plants, such as flax (*Linum usitatissimum*), has also been obtained from sites in Perth, such as Marks & Spencer. Although flax seeds can be used medicinally, as a purgative, an equally plausible explanation for their presence is as a by-product of linen textile manufacture. The flax plants themselves may have been cultivated either outside the burgh or within the backlands. Similarly, the process by which the flax was prepared for fibre production, known as retting, and which required the plants to be soaked in tanks of water, may have taken place within the burgh itself. The town lade provided an accessible water source for such industrial processes.

OTHER SORTS OF ENVIRONMENTAL EVIDENCE

Evidence of processes other than cultivation in the backlands has also been obtained from studying the botanical and other environmental remains. For example, the contents of latrines and cesspits from Perth, Aberdeen and Elgin have been examined and shown to provide clues to the diet, parasitic infestation and general hygiene of the human population. One instance of this type of evidence is the use of mosses as a kind of 'toilet paper' (Robinson 1987a). A similar use has been postulated for small pieces of lint textile found in a post-medieval cesspit at South College Street, Elgin (Robinson 1987b, 25). A fragment of burnt linen in a cesspit of medieval date at College Goods Yard, Glasgow, may have been used in a similar way (Boyd 1986, 4).

Animal bones can be used to reveal far more than the diet of the people who lived in the burghs. That some domestic animals were kept within the confines of the town itself is shown by the presence of buildings interpreted as byres and stockpens. One such building, with a byre attached (B4), was identified at Marks & Spencer, Perth; and animal dung, evidence of stabling within the town, was also found there in copious quantities (N Bogdan, pers comm). A byre was also identified at Kirk Close, Perth. Stockyards have been recorded at 42 St Paul Street, Aberdeen (where a yard area in one plot was bounded by a fence covered in animal dung), at King Edward Street, Perth (where hoofprints were found 'fossilized' in the animal dung overlying the gravel yard), and at Kirk Close, Perth (where a tethering post for animals still survived).

Pigs, although allowed to roam free, were occasionally kept restricted within styes. Evidence of young piglets suffering from rickets, possibly because of a lack of sunlight, suggests that they had been kept confined in dark styes (for example at Blackfriars House, Perth) (Smith 1995, 989).

Evidence from animal bone and leather off-cuts reveals that activities such as skinning, hide preparation and the tanning of leather took place in the towns. For example, the interpretation of a series of late 14th- to late 15th-century pits at 45–75 Gallowgate, Aberdeen, as tanning pits, was based on the presence of residues of plants used in the tanning process as well as leather and horn-core fragments discarded after skinning (Evans 2001, 105–11).

Higher than expected concentrations of cattle and goat horn cores have been found at two adjacent High Street sites in Perth (Marks & Spencer and 80–6 High Street: Smith 1997), which seems to indicate that the craft of horn-working was concentrated in a specific area of the town (although ditch deposits dominated by cattle horn cores were also observed at South Methven Street, Perth). Watching briefs in St John's Square, Perth, indicate that small-scale antler-working took place in the town, and similar small but significant deposits of antler fragments have been encountered at sites in Aberdeen's Gallowgate (Smith & McCormick 2001, 272).

Apart from the evidence for fleshing, and the possibility of the production of animal by-products such as 'neat's-foot oil' and tallow, other evidence of animal-based cottage industries in the backlands has been provided by the animal bones. Most notably, skinning cuts have been observed on the bones of cats. Although cut cat bones have been noted at urban medieval sites throughout Scotland, they are most abundant at the two Perth High Street sites, Marks & Spencer and 80–6 High Street, where a small-scale cat-fur industry seems to have flourished (Smith 1997). This craft never had the major economic importance of the Scottish hide and wool-fells industries, for which there is abundant animal bone evidence, but serves to illustrate the diversity of cottage industries which went on behind the High Street frontage.

DISCUSSION

The origin of the burgage plot is inextricably linked to the development of towns. The planning of classical towns, with a grid of straight streets and linear property boundaries, must, to some extent, have influenced early Anglo-Saxon proto-towns in England, like Hamwic (Southampton) and other trading *entrepots* of the eighth or ninth centuries. Despite this influence, it is with these latter settlements that the key features which typify medieval burgages make their first appearance – long, narrow plots, simple wooden boundary fences, rubbish pits and wells. In Scotland, then, we should perhaps be seeing proto-burgage plots in Anglian southern Scotland, where there is plenty of place-name evidence for *wic*s (Berwick-upon-Tweed, North Berwick, Hedderwick and Innerwick, for example). Here there is no archaeological evidence as yet, nor

indeed much further north in Viking Kirkwall nor to the west in Northumbrian and Norse-period Whithorn.

Many pre-burghal settlements in Scotland had royal or ecclesiastical connections as their original stimulus, or were situated on important and ancient river crossings like Aberdeen, Berwick-upon-Tweed, Dunfermline, Edinburgh, Glasgow, Perth, Roxburgh, St Andrews and Stirling. The archaeological evidence for this period is still elusive and what these proto-burghs looked like is still unclear despite 25 years of urban archaeology. Two small clues come from Perth where recent archaeological evidence from an excavation on the High Street frontage (80–6 High Street), uncovered an early, east/west, wattle-lined ditch lying parallel to High Street, if indeed High Street existed at this point in time. Radiocarbon-dated to the 11th century, the ditch had been deliberately backfilled, and a series of narrow, north/south burgage plots, extending back from High Street, was laid over it. This could represent merely the replanning of an existing settlement or, perhaps more importantly, the first recorded appearance of the burgage plot in Scotland. The second clue comes from almost directly across from 80–6 High Street – the Marks & Spencer site. Radiocarbon dating of charred residues from the inside of cooking pots in found the earliest levels have recently been dated to the 10th and 11th centuries AD (Hall 2003).

On present evidence, then, burgage plots in Scotland appear to go hand in hand with the historic founding of burghs in the early 12th century. It is well documented that English and Flemish merchants were invited to the Scottish burghs to stimulate trade and that at least one town was physically planned and laid out by these same people (St Andrews by Mainard the Fleming). Flanders was the most densely populated and industrialized region of north-western Europe and towns like Bruges and Ghent were amongst the very largest in Europe, with populations of c 50,000 each by the 14th century (Pounds 1994, 258). The invitation to the Flemish in particular to live in the newly created Scottish burghs in the early 12th century may be the most likely trigger for the widespread appearance of the burgage plot in Scotland, albeit a late one.

Anglo-Saxon towns were sub-divided, like a kingdom in miniature, and the size of a plot was clearly a measure of status. Very large, squarish areas, like those found around Glasgow Cathedral and in the eastern part of St Andrews, close to the cathedral, were preferred by high-ranking lords or clerics and their retainers, Medium-size square plots suited middle-rank non-commercial dwellings, the townhouses of country landowners. Long narrow plots, the classic burgage plots of the Scottish burgh, were ideal for the corporate body of merchants and craftsmen of middle rank, trading with each other and with strangers, governing their own affairs, dividing the land, its commercial advantages and its feudal dues in proportion amongst themselves; in short *burghers,* the *bourgeoisie*. The demarcation of the countryside was also an influence on the planning of these early towns. For centuries, the fields had been divided into strips in the same way for a similar reason, rationing and sharing a precious resource in a community of lower-middle ranking peasants with recognizable individual rights. In Scotland, both urban plots and field divisions were called rigs. This simple plot of land, then, fast disappearing in many burghs, was the physical embodiment of new concepts of landholding, individual rights and, indeed, town planning, in later 11th- and early 12th-century Scotland.

Burgage plots can still be seen in many towns, fossilized in more modern property boundaries and building lines, but are fast disappearing as modern townscapes continue to shake off the vestiges of their medieval past. Former medieval backlands, now empty space behind street frontages, offer tempting opportunities for developers or make ideal town centre car parks for Councils desperate to

attract shoppers away from out-of-town retail parks.

Given that few documentary records survive before the 15th century and that the living conditions in the backlands and of the unprivileged indweller are undocumented, archaeology is the only avenue left for a fuller understanding. For the study of burgage plots, big is beautiful, which does not sit well with the management of archaeology in towns and, in particular, the policy of preservation in situ. Large, open-area excavations which span several plots and which extend from frontage through to backland are few and far between. When they do occur, they offer a rare glimpse of the inner workings of adjacent households over many centuries, charting the routine of daily life as well as the economy of the burgh as a whole. Most developments, and therefore archaeological works, are confined either to the frontage or backland of an original medieval plot, as over time many plots have been sub-divided in this way. In effect, the same plot can be visited over and over again by different archaeological contractors recovering different information from different parts of the site. It is essential, then, that this information is easily accessible and that there are regular syntheses of this material. In a welcome development, Historic Scotland has funded a number of syntheses in recent years, both of particular types of evidence and of the evidence from particular towns.

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APPENDIX
Excavated sites where burgage plots have been identified

DES = *Discovery and Excavation in Scotland*

Town	*Address*	*Summary*	*Reference*
Aberdeen	45–75 Gallowgate	Pits, tannery, yards	Cameron & Stones (eds) 2001, 83–115
Aberdeen	45–7 Gallowgate	Buildings, plots, yards	Murray 1984, 303–314
Aberdeen	2–16 Harriet St	Stone wall	Murray (ed) 1982, 96–9
Aberdeen	42 St Paul St	Buildings, plots, pits, oven	Murray (ed) 1982, 46–84
Aberdeen	30–46 Upperkirkgate	Plots, pits, poss building	Cameron & Stones (eds) 2001, 60–72
Aberdeen	43–57 Upperkirkgate	Buildings	Cameron & Stones (eds) 2001, 50–9
Aberdeen	42 Loch St/14–21 Drum's Lane	Plot, garden, pit	Murray (ed) 1982, 109–10
Aberdeen	42 Upperkirkgate	Pit	Dennison & Stones 1997, 45
Aberdeen	Gallowgate Middle School	Craftworking pit	Cameron & Stones (eds) 2001, 73–82
Aberdeen	Smith's Warehouse, Queen St	Garden, midden	Dennison & Stones 1997, 51
Aberdeen	St Nicholas Triangle	Pits	Cameron & Stones (eds) 2001, 42–9
Aberdeen	16–18 Netherkirkgate	Plots, pits, buildings	Cameron & Stones (eds) 2001, 28–41
Aberdeen	2–28 Queen St	Stone walls, midden	Murray (ed) 1982, 17–9
Aberdeen	Queen St Midden Area	Building, pits, midden	Murray (ed) 1982, 20–25
Aberdeen	12–26 Broad St	Buildings, plots, pits	Murray (ed) 1982, 26–36
Aberdeen	Castle St	Plot, path, pits	Cameron & Stones (eds) 2001, 4–27
Aberdeen	27–37 Virginia St	Timber structure, pit	Dennison & Stones 1997, 72
Aberdeen	42 Virginia St	Timber structures	Dennison & Stones, 1997, 72
Aberdeen	64–72 Don St	Poss plot	Dennison & Stones 1997, 110–12
Anstruther	Tolbooth Wynd	Poss garden	Cox 1997, 119–142
Arbroath	69–71 High St	Garden	DES 1992, 72
Arbroath	115–25 High St	Poss garden	DES 1992, 72
Arbroath	104–8 High St	Poss garden	DES 1992, 72
Arbroath	James St/Church St	Garden	DES 1993, 94
Arbroath	14 High St	Structures, garden, wall	DES 1993, 94
Arbroath	Marketgate/Ladybridge	Cobbling, midden, cuts	Falconer 1995, 28–35
Arbroath	51–3 High St	Poss garden	DES 1994, 80
Arbroath	77–9 High St	Structures, pits	Perry 1999b, 50–71
Arbroath	170–8 High St	Poss garden	DES 1986, 41–2
Arbroath	200–12 High St	Garden, plot, pits	DES 1986, 42
Arbroath	24 Seagate	Poss garden	DES 1993, 94
Ayr	Garden St, Newton	Cultivation	DES 1985, 47; Perry (ed) forthcoming
Ayr	Carrick St/167–9 High St	Plots, garden	DES 1985, 47; Perry (ed) forthcoming
Ayr	Clydesdale Bank, 213–17 High St	Plot	DES 1985, 47; Perry (ed) forthcoming
Ayr	King St, Newton	Cultivation, fence	DES 1985, 57–8; Perry (ed) forthcoming
Ayr	21 Harbour St	Yard, midden, pit, industry	DES 1985, 48; Perry (ed) forthcoming
Ayr	River St	Garden, cultivation	Perry (ed) forthcoming
Ayr	21 Harbour St	Building, pit	DES 1986, 37; Perry (ed) forthcoming
Ayr	51 High St	Garden, cuts	DES 1987, 52; Perry (ed) forthcoming
Ayr	187–95 High St	Building, hearth, pits	DES 1986, 38; Perry forthcoming
Ayr	101–3 High St	Garden	DES 1987, 52; Perry (ed) forthcoming
Ayr	102–4 High St	Midden, pits, garden	Lindsay 1985
Banff	Walker Av	Garden	DES 1985, 16
Banff	Castle St	Plots, garden, cuts	DES 1993, 32
Brechin	Channonry Wynd	Garden, structures, pits	DES 1994, 80; 1996, 11
Brechin	17 Church St	Pit	DES 1981, 45
Brechin	5 Church St	Structure	Sherriff 1992, 355–65
Canongate	Holyrood Brewery, Holyrood Rd	Garden, midden	DES 1992, 53
Canongate	Huntly House Museum, Canongate	Midden	DES 1987, 30

Town	*Address*	*Summary*	*Reference*
Cupar	32–46 Bonnygate	Garden, kiln, pits	DES 1995, 27
Cupar	50 Crossgate	Midden	DES 1980, 6
Dingwall	High St, Co-op	Pits	DES 1985, 21–2
Dunbar	19 High St	Garden	DES 1989, 52
Dumbarton	Risk St/College St	Pits	DES 1971, 19; 1973, 24; Coleman forthcoming
Dumbarton	High St	Pits, garden	DES 1973, 24; Coleman forthcoming
Dumbarton	94–102 High St	Plots, buildings	DES 1997, 82; Coleman forthcoming
Dunfermline	Wilson's Close, 34 Maygate	Cultivation	DES 1989, 15
Dunfermline	High St	Plots, cobbling	DES 1981, 10; 1983, 6
Dunfermline	New Row/Priory Lane	Garden	DES 1993, 28
Dunfermline	Lauder Tech College, New Row	Building, hearths, garden	Lewis 1995, 1023–44
Dumfries	Friars Vennel	Garden	DES 1990, 10
Dumfries	High St/Irish St/Bank St	Backlands	DES 1993, 18
Dundee	62–8 Murraygate	Pit, oven, surface	DES 1989, 6
Dundee	Wishart Arch, Cowgate	Plots, drains	DES 1989, 62
Dundee	71–75 Murraygate	Midden	SUAT Archive
Dundee	East Port Car Park	Town ditch, walls	DES 1993, 98
Dundee	High St Tree Pits	Midden	DES 1995, 97
Dundee	Gardyne's Land	Garden, well	DES 1995, 97
Dundee	Green's Playhouse, Nethergate	Plots, garden, wells, pits	Mackenzie 1998, 179–201
Dundee	27–35 Murraygate/72–8 Panmuir St	Plots, kiln, tank	Brown & Roy 2000, 33–70
Edinburgh	High St/Cowgate	Plots, buildings, midden	Schofield 1976, 155–241
Edinburgh	Tron Kirk, Marlin's Wynd	Structures, pits	DES 1974, 81; 1983, 17
Edinburgh	St Mary's St	Late med stone building & Flodden Wall	Holmes 1980, 157–84
Edinburgh	Chambers St/Candlemaker Row	Structures, road, pit	DES 1973, 64
Edinburgh	High St, New Assembly Close	Midden	DES 1976, 31
Edinburgh	Old Assembly Close, High St	Midden	DES 1993, 57
Edinburgh	Advocate's Close	Midden	DES 1988, 18
Edinburgh	Chambers St	Plots, town ditch, pits	DES 1992, 50; 1993, 57
Edinbugh	Strichen's Close, Blackfriars St	Town wall	DES 1992, 51
Edinburgh	Tailor's Hall, Cowgate	Midden, pits, structure	DES 1992, 51
Edinburgh	John Know House, High St	Building	DES 1992, 51
Edinburgh	Magdalen Chapel, Cowgate	Ditches, midden	DES 1992, 51
Edinburgh	St Patrick's Church, Cowgate	Midden	DES 1992, 52
Edinburgh	South Gray's Close, Cowgate	Midden	DES 1978, 16
Edinburgh	50–6 Blackfriars St	Midden, structure, surface	DES 1992, 53
Edinburgh	St John's Hill, Pleasance	Pit	DES 1995, 53–4; 1996, 40
Elgin	Nicolson's Garage, High St	Plots, pits, well, soakaway	DES 1976, 44; 1977, 24
Elgin	N College St	Well, hearths, pits	DES 1976, 44
Elgin	S College St/High St	Ditch	DES 1989, 24
Elgin	213–25 High St	Garden, pits, hearths	DES 1993, 40
Elgin	Queen St/Greyfriars St	Pit	DES 1995, 36
Elgin	221 High St	Plot, pits	DES 1982, 13; 1983, 11
Elgin	36 Lossie Wynd	Garden	DES 1987, 23–4
Elgin	Lossie Wynd	Town ditch, well	DES 1977, 24
Elgin	24 Lossie Wynd	Pit	DES 1997, 55
Elgin	115 High St	Plots, pits, vennel	DES 1989, 24; Hall et al 1998
Elgin	123 High St	Pits, tank	DES 1989, 24; Hall et al 1998
Elgin	Butcher Lane, Creamery	Midden	DES 1986, 12
Elgin	Lazarus Lane	Pit	Hall et al 1998
Falkland	The Pleasance	Cultivation	DES 1996, 49
Forfar	17 Castle St	Building, drain	Spearman 1982, 457–64
Forfar	Royal Hotel, Castle St	Garden	DES 1994, 82

Town	*Address*	*Summary*	*Reference*
Forres	88–94 High St	Pits	DES 1993, 40; 1994, 29–30
Glasgow	11–29 Castle St	Plot	Chilton 1980, 97–105
Glasgow	Saltmarket/Bridgegate	Structure, pits	Stevenson & Torrie 1990, 33
Glasgow	St James Rd	Plot	DES 1984, 25
Glasgow	College Goods Yard	Plots, structures, pits	DES 1984, 25
Glasgow	Blackfriars St	Cultivation	DES 1985, 45
Glasgow	College Lane/Nicholas St	Industry, pits	DES 1987, 50
Glasgow	George St/High St/Albion St	Plots	DES 1992, 63
Glasgow	Provand's Lordship, Macleod St	Garden	DES 1993, 82
Glasgow	High St/College St/Shuttle St	Pit, ditches	DES 1994, 67
Glasgow	Osborne St	Pit	SUAT Archive
Glasgow	Greyfriars/Shuttle St	Garden	DES 1986, 35
Haddington	31–41 Market Street/Fortune Ave	Plots, hearths, garden	DES 1991, 49
Haddington	Newton Port Surgery	Garden	DES 1996, 37
Haddington	Court St	Plot	DES 1996, 36
Hamilton	Palace Grounds	Garden, kiln	DES 1996, 100; 1997, 77
Hawick	Crown Hotel, 20 High St	Garden	DES 1992, 8
Inverbervie	Craigview Works, High St	Garden	SUAT Archive
Inverkeithing	1 Bank St/5–7 Townhall St	Market place, pits, kiln	Wordsworth 1983, 520–50
Inverkeithing	52 High St	Garden, pit	Wordsworth 1983, 520–50
Inverkeithing	2–8 Bank St	Garden	Wordsworth 1983, 520–50
Inverkeithing	Port St	Garden, pits	Wordsworth 1983, 520–50
Inverness	13–21 Castle St	Buildings	Wordsworth 1982, 322–91
Inverness	Market Close	Ditch	DES 1989, 27
Inverness	Market Lane/32A Church St	Poss industry	DES 1986, 17
Inverness	17–19 High St/Lombard St	Midden, floors, pits	DES 1993, 43
Inverness	26–30 High St	Midden	DES 1994, 35
Inverness	Hamilton St	Town ditch, pits, tanning	DES 1976, 39
Inverness	Raining's Stairs	Building, cultivation	DES 1993, 44; 1994, 35
Inverness	19–21 Castle St	Med deposits	DES 1978, 13
Inverness	43–7 Church St	Pits	DES 1978, 13
Inverness	Abertarff House, Church St	Med deposits	DES 1978, 13
Irvine	121–5 High St	Med deposits	SUAT Archive
Kelso	13–19 Roxburgh St	Building, kiln, wells, pits	Dixon et al 2003
Kelso	55–61 Roxburgh St/26 Bowmont St	Plot, garden	Dixon et al 2003
Kilwinning	Abbeygate	Garden	DES 1987, 48
Kilwinning	115–19 Main St	Garden, midden	DES 1994, 63
Kirkcaldy	113 High St	Garden	SUAT Archive
Kirkcaldy	15 The Esplanade	Plot, garden, pit	DES 1994, 18
Kirkcaldy	Oswald's Wynd	Cultivation	DES 1994, 18
Kirkintilloch	Regent St/Union St	Cultivation, pits	DES 1990, 39
Kirkcudbright	Corby Slap, 128–30 High St	Town wall	DES 1993, 23
Kirkcudbright	Tanpits Lane	Town wall, ditch	DES 1993, 23
Lanark	Vere House, Castlegate	Plot, pits	Wordsworth & McGavin 93–104
Lanark	38 Broomgate	Pit	DES 1984, 27–8
Lanark	48–56 Broomgate	Cultivation, pits	DES 1979, 38
Lanark	50–8 Broomgate	Pits	DES 1976, 41–2
Lanark	Castlegate	Pits	DES 1983, 27–8
Lanark	Castlegate	Pits, metalworking	DES 1981, 36
Lanark	24–8 Castlegate	Furnace, structure	DES 1976, 41–2
Lanark	High St/Co-op	Pits, slag	DES 1988, 25
Lanark	Broomgate, Lanimer Knitwear Factory	Pit	DES 1989, 60
Leith	Commercial St/Dock St	Midden	DES 1976, 32; 1980, 21
Leith	Ronaldson's Wharf/Sandport St	Structures, midden, hearths	DES 1992, 54

Town	*Address*	*Summary*	*Reference*
Leith	Burgess St/Water St/Shore Place	Plots, industry, midden	DES 1993, 58–9; 1994, 48; 1995, 53
Leith	40–5 Water St	Plot, midden, garden	DES 1996, 40
Linlithgow	High St	Pits, tanning	DES 1974, 67
Linlithgow	St Michael's Wynd	Garden, gully	DES 1991, 51
Montrose	32 Castle St	Hearth, pits, midden	Sherriff 1992, 355–65
Montrose	29 Bridge St	Midden	DES 1983, 36
Montrose	Baltic St	Midden	DES 1083, 36
Montrose	Star Garage, New Wynd/Market St	Plots, pits	Mackenzie 1995, 36–47
Montrose	69–75 High St/New Wynd	Med backlands	DES 1996, 14
Montrose	Western Rd	Plot, garden, pits	DES 1997, 16
Montrose	62–4 Bridge St	Garden	DES 1996, 14
Musselburgh	Brunton's Wireworks	Garden	DES 1993, 56
Newburgh	116 High St	Garden, cut	DES 1997, 40
North Berwick	83–7 High St	Industry	DES 1987, 30
North Berwick	18–24 High St	Wall, garden	DES 1991, 49
North Berwick	Forth St	Kiln, midden	DES 1993, 56
North Berwick	Dalrymple Garage/Quality St	Midden, garden	DES 1995, 50
North Berwick	30 High St	Garden	DES 1997, 30
Paisley	25–9 High St	Garden	DES 1990, 39
Paisley	13 High St	Buildings	DES 1993, 93
Peebles	Cuddyside, Bridgegate	Buildings, industry	DES 1993, 10; 1994, 7
Peebles	Tolbooth, Bridgegate	Plots, buildings, industry	DES 1985, 3
Perth	High St/Watergate	Midden, structure	DES 1955, 22–3
Perth	George St	Pit	DES 1968, 35–6
Perth	Meal Vennel	Smithing, ditch	Cox 1996, 733–821
Perth	80 South St	Med deposits	DES 1983, 38; 1984, 41
Perth	Blackfriars House, North Port	Pits, ditches, garden	Bowler at al (eds) 1995, 917–99
Perth	Canal St (III)	Plots, garden, brewing	Coleman 1996, 689–732
Perth	Murray St	Garden	Bowler (ed) 2004, 123
Perth	Marks and Spencer, High St	Plots, buildings, pits	Bogdan & Wordsworth, 1978
Perth	10 Blackfriars St	Garden	Bowler (ed) 2004, 124
Perth	Scott St	Plots, pits, wells	Cox 1996, 733–821
Perth	12–22 Canal St	Garden	Bowler (ed) 2004, 124
Perth	New Row/Market St	Plot, garden	DES 1990, 41; 1991, 72
Perth	62 High St	Wall, surface	DES 1992, 80
Perth	St Anne's Lane	Midden	Thoms 1982, 437–54
Perth	Cow Vennel/South St	Backland deposits	Bowler (ed) 2004, 125
Perth	103 High St	Buildings, hearth, road	Roy & Falconer 2000, 87–108
Perth	153–5 South St	Plots, garden	Bowler (ed) 2004, 125; 143
Perth	80–6 High St	Plots, buildings, pits	Moloney & Coleman 1998, 707–82
Perth	Museum, George St	Backlands deposits	Bowler (ed) 2004, 125
Perth	45 Canal St (I)	Pits, gully, structure	Blanchard 1983, 489–519
Perth	N William St/Foundry Lane	Garden	Bowler (ed) 2004, 126
Perth	Kirk Close/86–100 High St	Plots, buildings, midden	Holdsworth (ed) 1987, 18–46
Perth	21–2 Mill St	Kilns & ovens	Bowler at al (eds) 1995, 917–99
Perth	29–30 S Methven St	Plots, buildings, horn pits	Holdsworth (ed) 1987, 47–58
Perth	35–43 Canal St (II)	Plots, pits, structure	Holdsworth (ed) 1987, 59–83
Perth	210–14 South St	Plots, hearth, pits, garden	DES 1996, 86
Perth	Pullars, Mill Street	Midden, kiln, garden	SUAT Archive
Perth	King Edward St/116 High St	Buildings, yards	Bowler et al (eds) 1995, 917–99
Perth	Canal St/Scott St	Plots, pit, garden	DES 1997, 65
Perth	59 George St	Pit	DES 1978, 31
Perth	Council Buildings, 1–5 High St	Midden	DES 1980, 39; 1981, 47
Perth	65–9 South St	Structures, midden	DES 1978, 31
Perth	187 High St	Garden, midden, surfaces	DES 1980, 39
Perth	11–13 Skinnergate	Midden	Bowler (ed) 2004, 133

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Perth	Mill Wynd	Midden, yard	Bowler (ed) 2004, 134
Perth	Cutlog Vennel/187–91 High St	Path, midden	Bowler (ed) 2004, 134
Perth	Charterhouse Lane/King St	Garden	Bowler (ed) 2004, 134
Perth	Kirk Close/Kirkgate	Midden, vennel	DES 1982, 34
Perth	271 Old High St	Garden	DES 1982, 34
Perth	Kirkgate/3 St John's St	Building, midden, surface	DES, 1982, 34
Perth	James IV Hospital, Hospital St	Garden	Bowler (ed) 2004, 130
Perth	Tay St/Speygate	Med deposits	DES 1979, 42
Perth	59–63 High St	Midden, fence–line	DES 1985, 56
Perth	145–59 High St	Midden, pits	DES 1985, 56
Perth	St John's Square Mall	Midden, structures, pits	DES 1985, 55–6
Perth	South Methven St	Midden, hearth	Bowler (ed) 2004, 138
Perth	97–9 High St	Midden, timbers, surfaces	DES 1979, 42
Perth	102–10 High St	Midden, surfaces	Bowler (ed) 2004, 141
Perth	High St/Caledonia Road	Wall, midden, garden	Bowler (ed) 2004, 142
Perth	108–10 High St	Midden, structures	DES 1991, 73
Perth	South St/Fleshers Vennel	Med deposits	DES 1991, 73
Perth	Cow Vennel/62 South St	Garden	Bowler (ed) 2004, 141
Perth	62–4 High St	Wall, industry	Bowler (ed) 2004, 124
Perth	15 Scott St	Garden	Bowler (ed) 2004, 142
Perth	210–12 High St	Midden	DES 1992, 81
Perth	72–4 High St	Midden	DES 1992, 80–1
Perth	George St	Midden	DES 1992, 80
Perth	Carr's Croft	Cultivation	Bowler (ed) 2004, 142
Perth	17–19 Speygate	Midden	DES 1993, 104
Perth	153–155 South St	Garden	DES 1992, 81
Perth	168 High St	Midden, fence	DES, 1995, 102
Perth	St Mathews Hall, 38 Watergate	Hearths, surfaces	DES 1994, 89
Peterhead	32 Broad St	Garden	DES 1994, 24
Pittenweem	Wynd	Garden, midden	DES 1979, 10
Rattray	Rattray	Deserted medieval burgh	Murray & Murray 1993, 109–218
Rothesay	Mill St/John St	Garden	DES 1986, 25
St Andrews	South St/Abbey St	Plots, building, pits	Rains & Hall (eds) 1997, 5–6
St Andrews	106–8 North St	Buildings	Rains & Hall (eds) 5–6
St Andrews	33 North Castle St	Pits	Rains & Hall (eds) 1997, 5–6
St Andrews	Queen Mary's House, South St	Plot, building	Rains & Hall (eds) 1997, 5–6
St Andrews	North St	Vacant plot	Rains & Hall (eds) 1997, 5–6
St Andrews	Auction Hall, Market St	Pits, gullies, garden	Rains & Hall (eds) 1997, 17–21
St Andrews	Old Cinema House, North St	Structures, garden, industry	Rains & Hall (eds) 1997, 17–25
St Andrews	134 Market St	Building, kiln, hearths, well	Rains & Hall (eds) 1997, 26–29
St Andrews	Central Motors, 120–4 Market St	Plot, pit, kiln, well, garden	Rains & Hall (eds) 1997, 26–29
St Andrews	29 North St	Med deposits	Rains & Hall (eds) 1997, 35–39
St Andrews	25 North St	Garden	DES 1991, 22
St Andrews	3–5 South Castle St	Structure	Rains & Hall (eds), 1997, 31–35
St Andrews	64 North St	Garden	SUAT Archive
St Andrews	Alexandra Pl	Plot, kiln	DES 1991, 22
St Andrews	125 Market St	Midden, pits, industry	DES 1995, 28–9; 1996, 50
St Andrews	137 Market St	Plot, garden, industry, pits	DES 1996, 50; 1997, 41
St Andrews	12 North St	Garden	DES 1996, 51
St Andrews	33 Argyle St	Garden, wall, cuts	DES 1996, 50; 1997, 40–1
St Andrews	64 Argyle St	Garden	DES 1996, 50
St Andrews	31 Market St	Walls	DES 1997, 41
St Andrews	121 North St	Garden	DES 1997, 41
St Andrews	106–10 South St	Plots, building, garden	Cachart 2000, 109–136
St Andrews	78 South St	Garden	DES 1986, 9
St Andrews	129 South St	Garden, furrows	DES 1985, 15

Town	*Address*	*Summary*	*Reference*
St Andrews	15 Church St	Structures, garden	DES 1985, 15
St Andrews	1 Church Sq	Garden	DES 1985, 15
St Andrews	50–2 Argyle St	Garden, building, kiln	SUAT Archive
St Andrews	135 Market St	Garden, kiln, pit	DES 1990, 15
St Andrews	69 South St	Buildings, floors, pit, ovens	DES 1990, 15
St Andrews	19 South St	Plot	DES 1990, 16
St Andrews	St Mary's College, South St	Plots, vennels	DES 1995, 28
St Andrews	25 N Castle St	Buildings, pit	DES 1991, 23
St Andrews	Byre Theatre, Abbey St	Buildings, garden, pits	DES 1996, 50
St Andrews	TA Hall, 13 City Rd	Plot, pit	DES 1996, 52
Stirling	Broad St	Structures, oven, garden	DES 1982, 8
Stirling	Erskine Marykirk, St John St	Garden	DES 1991, 8
Stirling	Old Military Prison, St John St	Garden	DES 1993, 13
Stirling	Mar Place House, Broad St	Garden	SUAT Archive
Stirling	Broad St	Midden, road	DES 1994, 11
Stirling	Broad St Tree Pits	Garden	DES 1995, 16
Stirling	Broad St/Back Court	Pits, industry	SUAT Archive