

The construction chronology and significance of timber for building Panmure House, Angus

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ABSTRACT

This paper presents the first comprehensive analysis of Panmure House, Angus (NGR NO 53734 38625), as originally built for the earls of Panmure between 1666 and 1670. Although considered in its day as one of the finest houses in Scotland, Panmure has never been the subject of an individual study. An extensive collection of building accounts and contracts found in the Dalhousie Muniments, supplemented by William Adam's drawings have, however, afforded the opportunity to investigate in some detail how the building works for the earl of Panmure were organised and executed. Through careful examination of this evidence, a clearer understanding of the design and development of Panmure has emerged, revealing how such building works were organised, which craftsmen were employed, and what materials were required for its completion. In particular, the increasing use and significance of timber for building works in 17th-century Scotland can be recognised at Panmure, a development which can be directly linked to the emergence of Norway as the prime supplier of building timber to Scotland from the 16th century onwards.

Unless stated otherwise, the pound Scots is used throughout this work.

INTRODUCTION

Panmure is an example of a house built during a period of extensive country house building in post-Restoration Scotland, a time when many members of the nobility updated and remodelled their properties, often quite extensively (McKean 2001: 240; Wemyss 2002: 4–8). Panmure was regrettably demolished, like many other great Scottish houses which have been lost, in this case in 1955 (Gow 2006: 54). In order to further our understanding of this building there are several factors which need to be considered, including analysis of any physical remains and visual documentation, the location of the

building, its layout and the motives for its construction (Howard 1998: 14–29). Although Panmure's demolition effectively ruled out any detailed examination of the fabric of the house, a site visit confirmed that the 18th-century stable block (probably built by John Smart of Dundee) is still standing, as are the adjoining remains of the 17th-century kitchen court, remodelled by David Bryce in 1852. The site has the potential for archaeological excavation, which would establish the footprint of Panmure and confirm the exact length and width of the building.

Fortunately, drawings of Panmure (illus 1 & 2) published in William Adam's *Vitruvius Scoticus* (Simpson, 1980: 129–31) provide

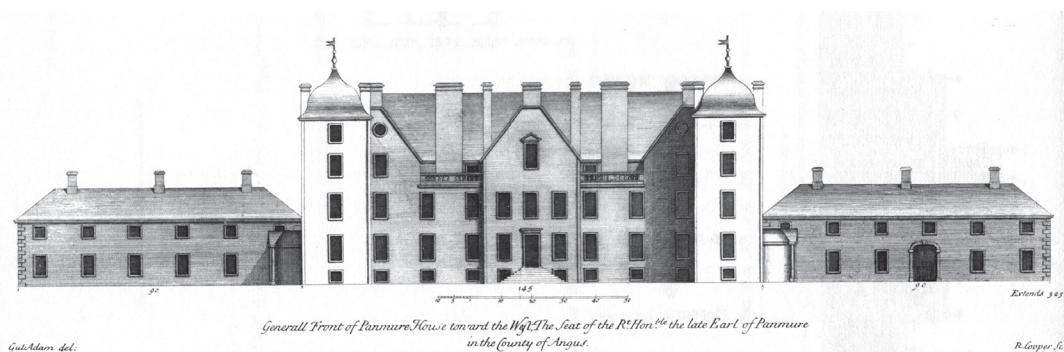
us with a representation of the house, probably dating from *c* 1726 when Adam started collecting work for his publication. His elevation of the west front shows an impressive 11-bay building, with viewing platforms, bastions and numerous windows.¹ Importantly, Panmure is an example of a building that incorporated the use of longer span timbers – allowing for a building with larger rooms – than those found in Scotland’s earlier Renaissance country houses, where the maximum room width was customarily 20ft (*c* 6m). Each room required flooring, panelling, doors, windows, shutters, partitions, plaster ceilings, and furniture. The surviving contracts and accounts have been used to analyse what timber was required for Panmure to determine the principal types and cuts of timber used for these different purposes (for example, structural elements such as roofing, and flooring, finishing work, and furniture).

An inventory dated 1686 (NAS GD45/18/857) describes Panmure’s 49 hearths and its well-furnished interior: the Great Hall with several large oak tables, 26 leather chairs, leather wall hangings and painted screens; the Great Dining Room with its ‘fyne new arras hingings’, 24 cane chairs and three walnut-tree tables; the High Drawing

Room with ‘sixteen japan armed chairs’. The apartments for family and guests were equally well furnished with arras hangings, beds, cane chairs, cabinets and mirrors. There are very few houses documented as having comparable furnishings at this time; examples include Hamilton, Glamis and Yester (Wemyss 2009: 127–84). Panmure was clearly built and furnished as a statement to reflect the Maule family’s rising status amongst the Scottish nobility.

Panmure House was much admired by contemporaries and in 1682 was thought by many, except Halyruidhouse, the best house in the kingdome of Scotland, with delicate gardens, with high stone walls, extraordinaire much planting, young and old; many great parks about the new and old house; ... in a word, is a most excellent, sweet, delicate place. The familie is very ancient and honourable, and has been always very great, and were reckoned, before they were nobilitat, the first Barons of the shyre (Ochterlony 1969: 36).

The Maule family already had a long association with the lands at Panmure, and it was here that the family’s ancient paternal seat of Panmure Castle – the ‘old house’ – was located (NGR NO 54464 37661). The castle was probably built by Sir Peter Maule around 1224, and though many of the buildings had become ruinous, a new hall and round tower,

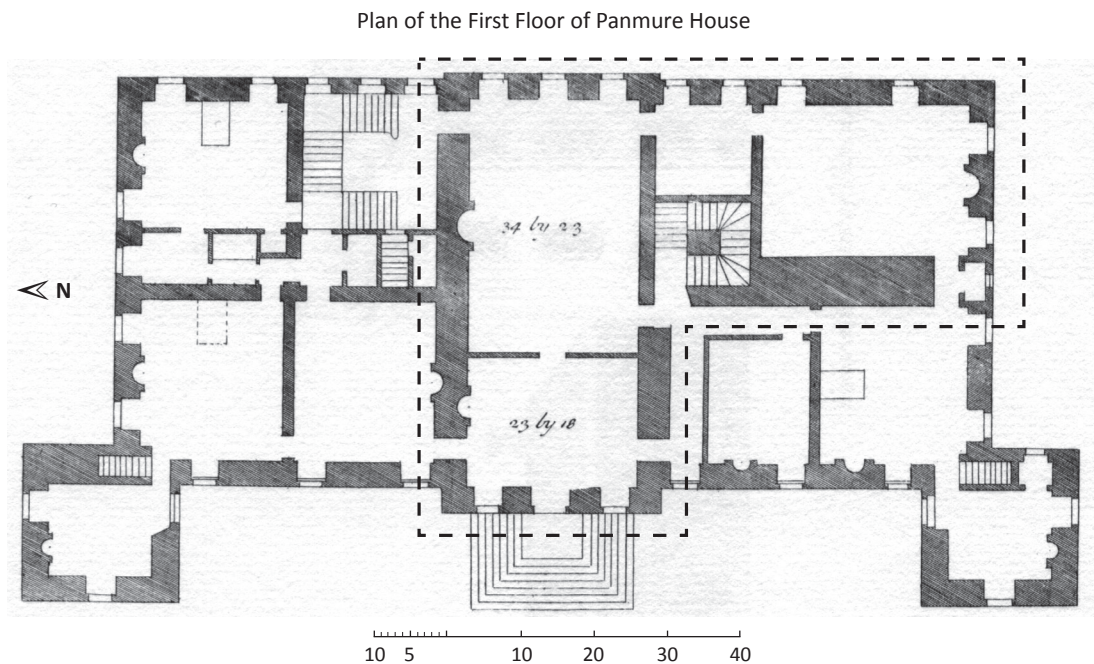


ILLUS 1 Panmure House as portrayed by William Adam. The kitchen court and woman’s court added in the 1690s are also shown (© University of Strathclyde. Licensor <http://www.scran.ac.uk>)

built on the north side of the castle in the early 16th century, were believed to have remained habitable until the mid-17th century (Millar 1890: 278–84). The initial idea for building a new house at Panmure was mooted by the 1st earl, Patrick Maule (1585–1661). He had been a gentleman of the bedchamber to James VI and Charles I – who appointed him ‘keeper of the park and palace of Eltham (in Kent) and High Sheriff in Angus’ (Lamb Collection, Central Library Dundee). In March 1632, he received a charter for the Barony of Dounie, followed by Panmure in December of the same year. In October 1634 he also received the lordship of Brechin and Navar, plus further lands and baronies at later dates. During the 1640s, he purchased from the earl of Dysart the Lordship and superiority of the Abbey of Arbroath, which included patronage of 33

parish churches (Lamb Collection, Central Library Dundee). He was then created the 1st earl of Panmure, Lord Brechin and Navar on the 3 August 1646 (Maule 1874: 327).

Adam’s plans clearly point to an existing building incorporated into the new house at Panmure (McKean 2001: 252). A study of the first floor shows distinctly thicker walls in the central and southern parts of the building (illus 2). This is indicative of a newer building being built over the remains of an existing one, as was often the case in Scottish houses, for example, Brechin Castle (NGR NO 59782 59892), another property belonging to the earl of Panmure (Walker & Dunbar 1971: 378–81). The question regarding Panmure is, which building was modified and why did the family apparently abandon their ancient paternal seat of Panmure Castle?



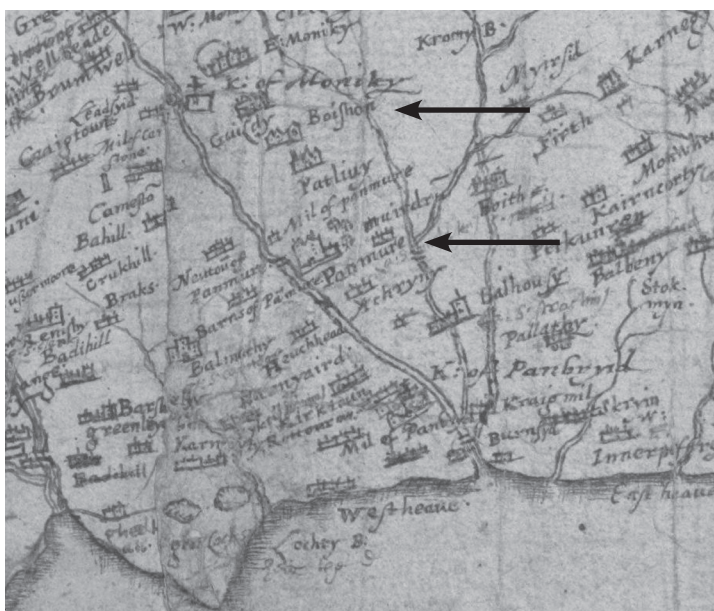
ILLUS 2 First storey of Panmure House from by William Adam, adapted from the original with the dotted line indicating the original thicker walls of Boishen (© University of Strathclyde. Licensor <http://www.scran.ac.uk>)

SITE LOCATION

An agreement between the future Earl Patrick and Andrew Drummond (minister of Panbride), dated July 1619, indicates that, when in Angus, the family no longer used Panmure Castle as their main residence, and *Bauishen* was named instead (Lamb Collection, Central Library Dundee). This place name appeared often in earlier connections with the Maules where many different forms are used. According to the *Registrum de Panmure*, the lands of *Balyshan* had been ‘conveyed by Sir Thomas Maule to his grandson and heir’ in 1497 (Maule 1874: 260). In 1532, Robert Maule and his wife Elizabeth Mercer obtained a 19-year lease of the tithes sheaves of the Mains of Panmure, Pitlivie and *Ballischane* from the Abbot of Arbroath. Letters dating 1640 are written by Patrick Maule from the same place, which implies that he resided here both before and following his being made earl. Further evidence points to extensive lands being farmed by tenants; James Petrie in *Bawishen* paid a portion of the minister’s victual in 1631 and Andrew Ramsay was recorded living at the Cotton of *Bauishen* in 1643 (*Dundee Advertiser* 1872: 2).

It would have been unusual for a family to completely abandon their ancient paternal seat and an examination of Timothy Pont’s map of *Lower Angus and Perthshire east of the Tay* dated from 1583 to 1596 shows the house of *Boishon* (illus 3) was located only

a short distance to the north of Panmure Castle. Thus a move to Boishon – a property already associated with the Maules – in the early 1600s would not have meant the abandonment of the ancient paternal seat. It was here at Boishon that Patrick, the 1st earl, began preparations for building his new house within the locality known as Panmure, which extended from the castle in the south to Guildy in the north.



ILLUS 3 Timothy Pont’s map of Lower Angus and Perthshire shows Boishon just north of Panmure and Pitlivie c 1590. It would seem that at the time when Pont recorded this area of Angus, Panmure Castle was still in habitable condition (*National Library of Scotland*)

In 1648, Patrick Maule purchased the rights of various leaseholders at Boishon. One of these was a John Pitire, who occupied two parts of the land. He agreed to ‘flitt and remove his wife, bairnes, servants, famillie, gudes and geir’ at Whitsunday of the same year, from the houses and lands in his occupation at *Ballishane* (NAS GD45/18/283; Warden 1885: 65). In April, May and July of 1649, David Masterton the King’s glazier was employed



ILLUS 4 Robert Edwards map, dedicated to the earl of Panmure, and published in 1678 shows the location of the new house at Panmure, with the old castle visible just south of the new house (*National Library of Scotland*)

to carry out improvements to the windows at Brechin and ‘the old house of *Balashion*’ (NAS GD45/18/673). Patrick’s aspirations for building a new house, appropriate to his recently elevated status, at the site of the ‘maner place of *Bolishen*’, however, would not be realised during his lifetime (Register of Sasines 35/1/325).

The Panmures became directly involved with the troubles of the following decades. Both the earl and his second son Henry were fined considerable sums in 1654 by Cromwell’s Act of Grace and Pardon for their loyalty to Charles I. The 1st earl was fined £10,000 sterling and Henry £2,500 (Maule 1874: 260). Consequently, when the 1st earl died in 1661, he had not made any significant progress on his new house. He had, however, directed his son and successors to erect a new mansion at *Boishan* and it was George, the 2nd earl of Panmure who carried out his father’s earlier intentions.

The location of the new house can be found on Robert Edward’s map of Angus

from c 1678 (illus 4). When compared with Timothy Pont’s map from c 1590 we can see the location of the new house was placed, fairly accurately, at Boishon. Edward was the minister at nearby Murroes and had a long association with the Maules, his wife, Jean Johnston, being distantly related to the Irish branch of the family (Lowrey 1987: 3). The 2nd earl of Panmure was Edward’s patron for both his map and his *Description of the County of Angus in the year 1678*, and Panmure’s coat of arms was included on the map. Edward also provided a description of the house at Panmure, where the 2nd earl ‘hath lately built a magnificent house, proportioned to his ample fortune, adjoining to the ancient Castle of Panmure ... and of the same name, as if it had been only a reparation’ (Edward 1678: 14).

Thus, by rebuilding on a neighbouring site, the family’s connection with both the old manor house and the castle of Panmure was reinforced and linked the new house of Panmure with their ancient paternal seat.

BUILDING DESIGN, CONTRACTS AND CHRONOLOGY

Scotland's Renaissance country houses, traditionally referred to as tower houses or castles, had been constructed with substantial stone walls often over 6ft (1.82m) thick – 11ft (3.35m) in the case of Alloa Tower in Clackmannanshire (Gomme & Maguire 2008:29). They had stone vaults, and a few small windows on the ground floor with larger ones on the upper storeys (Howard 1995: 53). An important factor that determined this type of building's overall dimensions was the use of stone barrel vaults (as single or multiple units) with a maximum span of approximately 20ft (*c* 6m) (Howard 1995: 68; McKean 2001: 66), a restriction determined in part by the lack of available timber in Scotland. By the 16th century, Parliament declared that Scotland's woods were 'utterly destroyed'; in part hastened by James IV's (d 1513) naval expansion. Any remaining timber was often found in areas with challenging terrain making it very costly to transport. Where timber was available locally and was of suitable quality, it was used for building, and the earliest surviving example of a roof structure constructed from native pine can be found at Castle Grant, Speyside (NGR NJ 04137 30181), where the length of the roof timbers measure 18ft (*c* 5.5m) and date from the 16th century (Smout, MacDonald & Watson 2005: 80–2). But by the early years of the 16th century, Scotland's resources of timber were no longer sufficient to meet demand and Scots had to import timber from abroad, usually from either Scandinavia or the Baltic. There is dendrochronological evidence of timber being brought from the Baltic Sea region from as early as the 14th century (Mills 2000; Smout 2003: 75).²

During the 17th century, many of the structural elements found in Scotland's

Renaissance houses were remodelled. Significantly, wall thicknesses were cut back to widen rooms, and houses were modified or built to take longer span timbers that were, for the most part, supplied from Norway (Newland 2010). At the same time, vaults were replaced with timber joisting to carry the floors above, plaster ceilings were introduced, more numerous and larger windows with shutters were inserted, and these interiors required panelling. Many of these developments, requiring substantial volumes of timber, were incorporated into the design and construction of the new house built for the earls of Panmure.

The first written evidence directly referring to the building at Panmure is a draft letter dated 1666, addressed to 'a person to be in charge of the building of Panmure House'. This document outlined several innovations concerning the location and nature of the kitchens, put forward by the earl of Panmure's wife, Lady Jean Campbell (eldest daughter of John Earl of Loudon, the Lord High Chancellor of Scotland):

my wife has a strong inclina[tion] to have a storie of the house halfe under ground where she would have the kitchen . . . and a latter meat hall and some chambers for the servants to lye in and sellars if you can find a possibilitie to gette this done with out under water I think it would be werie commodious for by that means the low hall shall be free of any smell from the kitchen and wee and our children may have commodious lodging upon one flower without the trouble of goeing up as many stairs (NAS GD45718/623).

The proposal for a semi-subterranean kitchen basement was a radical departure from traditional building design in Scotland and predated similar basements at Dunkeld (1676) and Moncrieffe (1679) (Wemyss 2002: 31–3). A semi-basement permitted greater ceiling height, reducing the intense heat produced in kitchens (Gomme & Maguire 2008: 185),

however, the intention at Panmure seems to have been to separate the household from cooking odours rather than improve conditions for those working in the kitchens. An additional feature at Panmure was the use of the ‘double-pile’, that is, a plan with two rooms throughout the depth of the building (Grieve 2008) and previously only used at Culross Abbey House in 1608 (Wemyss 2002: 32). Wemyss compared the internal layout of Panmure with that of Charlton in Greenwich (1607–12), which also has a semi-subterranean kitchen basement, whilst externally he drew comparisons with Blickling in Norfolk (1607–12). The influence of these English buildings in the design at Panmure probably originated with Patrick, the 1st earl of Panmure, who had spent many years in England as a gentleman of the bed chamber to both James VI and Charles I. He was well acquainted with English courtiers, including Adam Newton, tutor to Prince Henry and builder of Charlton. Patrick then directed his son George to erect the new mansion that ‘he had designed’ (Maule 1874: cxlviii), implying that there may already have been some initial plans drawn up by the 1st earl.

The 1666 draft letter was probably intended for John Mylne, the King’s Master Mason, and it suggested April as suitable for the arrival of masons on site, which coincides with a contract addressed to Mylne dated ‘the last day of February 1666’. In the contract, Mylne agreed ‘to erect and build of guid and sufficient plain ston work’ for Panmure,

his intended house at Boleschen in Angus according to the maner forme and dimensions of the said structure and edifice designed and set down by the said John Milne in draughts and agreed to by the said noble Earle ... the said John Milne obleigges himselfe to enter to work betuixt and the first tuesday of April nixt ... (NAS GD45/18/566-1; Mylne 1893: 153–6).

This not only confirms the location of Boishon, but also that John Mylne was the architect responsible for the final plans and drawings of the new house. The contract stated that Mylne was to be present at the laying of the foundations and at the beginning of each subsequent storey. If, during his absence from the site, the earl of Panmure changed his mind with regard to the placing of doors, windows or chimneys, Mylne’s appointed deputy was to follow the ‘said noble Earles order and so to evite [avoid] all misunderstanding either in the men or in the worke or the forme therof ...’ Mylne was also required to give directions, not only to the masons, but also the ‘maner and forme’ of the ironwork, wright work, slate work, glass work, plumbing work and plastering; indeed, he was to be responsible for whatever was necessary for the completion of the building and as such was employed as the main contractor.

As part of the contract, Mylne appointed a deputy responsible for directing those under him and ‘the said master Oversier’ was, in addition to his wages, to have ‘bed and boord in his Lordships house’ (NAS GD45/18/566–1). He appointed Alexander Nisbet, master mason and burgess of Edinburgh, to this role. It is unclear which house was being referred to here for his bed and board. It is likely that the house at Boishon, plus any ancillary buildings, would have been dismantled to provide materials and make way for the new house of Panmure, and in May 1666 there was a reference to ‘taking down slates off the old house above the gate’ (NAS GD45/18/27/128). There may have been suitable accommodation at the old castle or one of the family’s other properties in the surrounding area and Nisbet probably boarded with the family at Ardestie (NGR NO 5063 3368), a few miles to the south-west of Boishon (*Dundee Advertiser* 1872: 2). Ardestie had been the 2nd earl’s residence;

he lived here following his marriage to Lady Jean Campbell in 1645. Their children, the future 3rd (George b 1650) and 4th (Patrick b 1658) earls of Panmure were both born at Ardestie, as was their brother, Henry Maule of Kelly (b 1659) (Warden 1885: 413–29).

The new house at Panmure was built, in the main, from 1666 to 1670 (NAS GD45/18/566/1–4). The initial contract with John Mylne demonstrates that he was responsible, as master of works, for the final design and specification of the work being carried out for Panmure. Following Mylne's

death in 1667, his deputy Alexander Nisbet took over responsibility for the masons' work, until its completion in September 1670. A separate contract was also drawn up in 1668 with James Baine – master wright, burghess of Edinburgh and timber merchant – to carry out both the wright and plaster work.

During the 1690s, the 4th earl, Patrick Maule also employed the Bauchop brothers, Tobias and John, to build two additional courts flanking the main house: the woman's court and the kitchen court (NAS GD45/18/614/1–114). However, it is the contracts with Baine,

TABLE 1
Building trades chronology at Panmure House

<i>Year</i>	<i>Mason work</i>	<i>Wright work</i>	<i>Slating</i>	<i>Glazing</i>	<i>Plaster work</i>	<i>Painting</i>	
1666							
1667							
1668		Roofing/ flooring					
1669		Doors/ windows/ staircase					
1670							
1671		Stables					
1672	West gates						
1673							
1674							
1675							
1685		Fitting out					
1686							

plus the additional books of building accounts and discharges, which provide details of the organisation of what was essentially a new building project, albeit over an earlier, largely modified building. These documents are also invaluable for detailing the acquisition of all the necessary building materials, and for formulating a chronology of the building process itself. Of particular interest is the timber required for such a building project, listed with quantities, types of cut and costs, some of which came in shipments procured directly from Norway.

An outline and timetable of the different building phases can be reconstructed from discharges and contracts agreed with Mylne, Nisbet and Baine (Table 1). By the end of February 1666, the general plan, dimensions and layout of the new house had been discussed, drawn up and agreed upon by the earl of Panmure and John Mylne. Essentially, Panmure was to be built as a symmetrical 11-bay house, with bastions at the south-west and north-west corners, and viewing platforms facing west at the third storey. The approximate dimensions of the house were 145ft × 60ft (44.2m × 18.2m) with an estimated height of 58ft (17.7m). The formal route through the house was through a transverse Great Hall via the Great Stair to the Great Dining Room and High Drawing Room on the principal floor or *piano nobile* above. This was very similar to Leslie in Fife, also designed by Mylne for the earl of Rothes c 1666, though executed by his nephew Robert Mylne.

The masons duly arrived on the first Tuesday of April 1666, when John Mylne was present at the ‘foundatione where everything may be spoke of that concerns the first storie’ (NAS GD45/18/566/1). His deputy, Alexander Nisbet, remained in situ to oversee the work and make any adjustments requested by the earl. John Mylne’s death in December 1667 meant that new contracts had to be drawn up.

What had been achieved under John Mylne’s direction?

The *Volume of Charges*³ indicate that there had been a maximum of 17 masons working at any one time during 1666, with up to 29 men in 1667. Two wrights, John Lyall and John Johnston, had been employed for 28 days in 1666. At the same time, a total of 80 double trees,⁴ 12 great trees, 14 long double trees, 40 single trees and 145 fir trees were purchased at a total cost of £740 5s 4d by John Maule, the earl’s chamberlain, although in the early stages of the building works, any suitable timbers from Boishon would have been re-used. Following a break from the work during the darkest months of the winter, masons returned on 18 March 1667 and ‘began againe to lay upon the walls’. That the mason’s lodge was extended indicates that more masons were expected to arrive. At the same time, ‘gesting gloves’⁵ were purchased, implying that timber frameworks were ready to be positioned, and that the foundations and more than one storey of the house were certainly complete (NAS GD45/27/128). Timber would also have been needed for scaffolding as the walls gained in height. The contract with Nisbet (dated 28 January 1668), however, disclosed very little of the building’s progress and mainly covers the working conditions and pay of the masons, repeating many of the terms and conditions from the original contract with Mylne in 1666 (NAS GD45/18/566/2).

Baine’s contract for wright work was dated 10 February 1668. It indicates that the new house was now almost at a stage where it would be ready to receive windows, doors, flooring and roofing couples, and that Baine was to enter the site in May 1668 to undertake these works (NAS GD45/571–3). From this, it is clear that the house was fairly advanced by the time of John Mylne’s death in 1667. A later note in the *Volume of Charges* also refers to the purchase of 160 foot of ridge stones for the

roof in February 1668, and a year later most of the roof had been slated, with the bastions and bell house completed during the spring and summer of 1670 (NAS GD45/27/128). This first contract also signals the start of a long working association between Baine and the earls of Panmure, which continued into the 1690s at Brechin Castle.

The extent of the building work already completed by the time of Mylne's death also refutes any suggestion of influence or changes brought about by Sir William Bruce, who, it has been suggested, worked at Panmure in the late 1660s, based on stylistic similarities with his own house at Balcaskie (Maule 1874: cxlviii; McKean 2001: 252; Gow 2006: 52). Bruce was not involved with work at Panmure until the 1670s and 1690s. His specific works there included the west gates and two flanking courts⁶ built in the 1690s for the 4th earl, but there is no evidence of his direct input during the first building phase of the central house.

JAMES BAINE, HIS MAJESTY'S WRIGHT

James Baine was a master wright and burghess of Edinburgh (Grant 1906: 13; Watson 1929: 43; Bamford 1983: 41); at the same time, he was a successful timber merchant with substantial stocks at the Timber Bush in Leith,⁷ where he probably dominated the market. Baine was also employed by many members of the Scottish nobility, becoming the foremost master wright in the country when he was appointed His Majesty's Master Wright in 1671.⁸ The standing of Baine and his fellow wrights in the records suggests that in the late 17th century, timber achieved a new prominence as a key building material in Scottish great houses. The increased emphasis on the use of timber for building works, in particular the use of longer timber spans for roofing and flooring, would

certainly have relied on the skills of wrights rather than masons (Newland 2010).

The organisation of building works in Scotland was also changing and there was a move away from the earlier system of direct labour – where the builder/owner undertook the control of building operations himself – towards a contract system (Dunbar 1976: 9). In the 17th century, many builders of Scotland's high status houses began to employ a master of works or one main contractor responsible for the administration of the building work, which is effectively what Panmure had done when he employed John Mylne. Following Mylne's death, however, the building work was contracted out to separate trades, with Baine responsible for the wright and plaster work at Panmure.

The earls of Panmure entered into a total of four contracts with Baine at Panmure, spanning 17 years from 1668 to 1685. A common stipulation in all these contracts is that the Panmures agreed to take responsibility for 'timeously' providing all the necessary timber (NAS GD45/18/566–3). There was a similar clause in the 1666 masonry contract for the supply of stone (NAS GD45/18/566–1). If the earl failed to provide the wrights with the necessary timber in time, he was obliged to pay a costly penalty for each day the men remained idle. On the other hand, if Baine failed to fulfil his side of the agreement he was to pay 500 merks to Panmure (NAS GD45/18/566–3). Baine's wrights were also forbidden to make use of or fell Panmure's own forests on the estate for timber if they lacked materials; only Panmure's tenants were permitted to fell trees for this purpose (NAS GD45/18/571–3). Panmure would thus have had to monitor the supply of timber to and at the site, or fall foul of his contractual obligations. Critically, perhaps this was why he employed James Baine in the first place; since Baine was a

timber merchant, he would have been able to provide the different types and quality of timber needed for Panmure – either from his own stocks in his yard in Leith, or by direct purchases from domestic and foreign supplies of timber. The surviving contracts and accounts, plus the ensuing disputes over payments with Baine provide key information regarding what materials were supplied, and how they were acquired and used in the building of Panmure.

FIRST CONTRACT – 10 FEBRUARY 1668

The first contract, signed 10 February 1668, stated that Baine was to supply ‘ten sufficient wrights’ (NAS GD45/18/571–3) to carry out the work described in the contract, and be in attendance to observe and direct the work himself. This contract specified the piecework prices for windows, doors, flooring and the roof, and included hanging the finished doors, and fitting out the windows with their bands, snecks and rings. Panmure remained responsible for supplying the timber and ironwork for the work described in the contract, and also had to supply meat, candles and lodgings for the wrights.

Baine and his men ‘entered to worke at panmure the 16 of June 1668’ and this naturally coincided with an increase in the purchase of timber for Panmure, including shipments from Norway delivered to Dundee (NAS GD45/27/128). This timber included approximately 3,500 deals at a cost of £1,460, probably for sarking and flooring, or panelling and partitions. The largest quantity was purchased by John Maule, the earl’s chamberlain, but some also came from Baine and David Johnston (NAS GD45/27/128; NAS GD45/18/576/5). There were also quantities of knapholt and wainscot, probably for doors, windows and shutters. Baine supplied a wide variety of timber types and cuts, as would be

expected of a timber merchant, and he was able to supply oak wainscot and knapholt, both oak and pine deals, plus fine and thick deals in large quantities. This not only demonstrates the extent and variety of the timber stocks Baine had accumulated by the late 1660s, but also the increasing significance of timber required for such building works (Newland 2010).

Roofing

The specification for the roof structure at Panmure, excluding the two pavilions or bastions, stated that each ell of the roof was to be ‘double balked with sarking’. It also stipulated that the roofing couples were to be placed ‘sixteen or eighteen inches asunder’, with wright work on the roof structure priced at 16 shillings for each square ell (NAS GD45/18/571/3). This information suggests that the roof at Panmure was likely to have been a collar rafter roof, ie one in which the rafters are connected by collar-beams, and the rafter feet are shaped into a triangle consisting of rafter, ashlar post and sole piece (Hay 1976: 31).

These instructions, written in February 1668, stipulated that the wrights should be in attendance during May of the same year to carry out the above works. An examination of the *Volume of Charges* shows a corresponding increase in the purchase of timber from March onwards. Most significantly, it included the import of two cargoes of timber direct from Norway for Panmure – perhaps a reference to the roof timbers arriving. This could signify that the earl of Panmure had ordered the roof timbers directly from Norway, as Patrick Smythe was to do for Methven, between 1678 and 1681.⁹

The dates of the two cargoes’ arrival at Dundee correspond with the start of Baine’s activities at Panmure. The first cargo arrived on board the *Good Hope* of Fraserburgh on

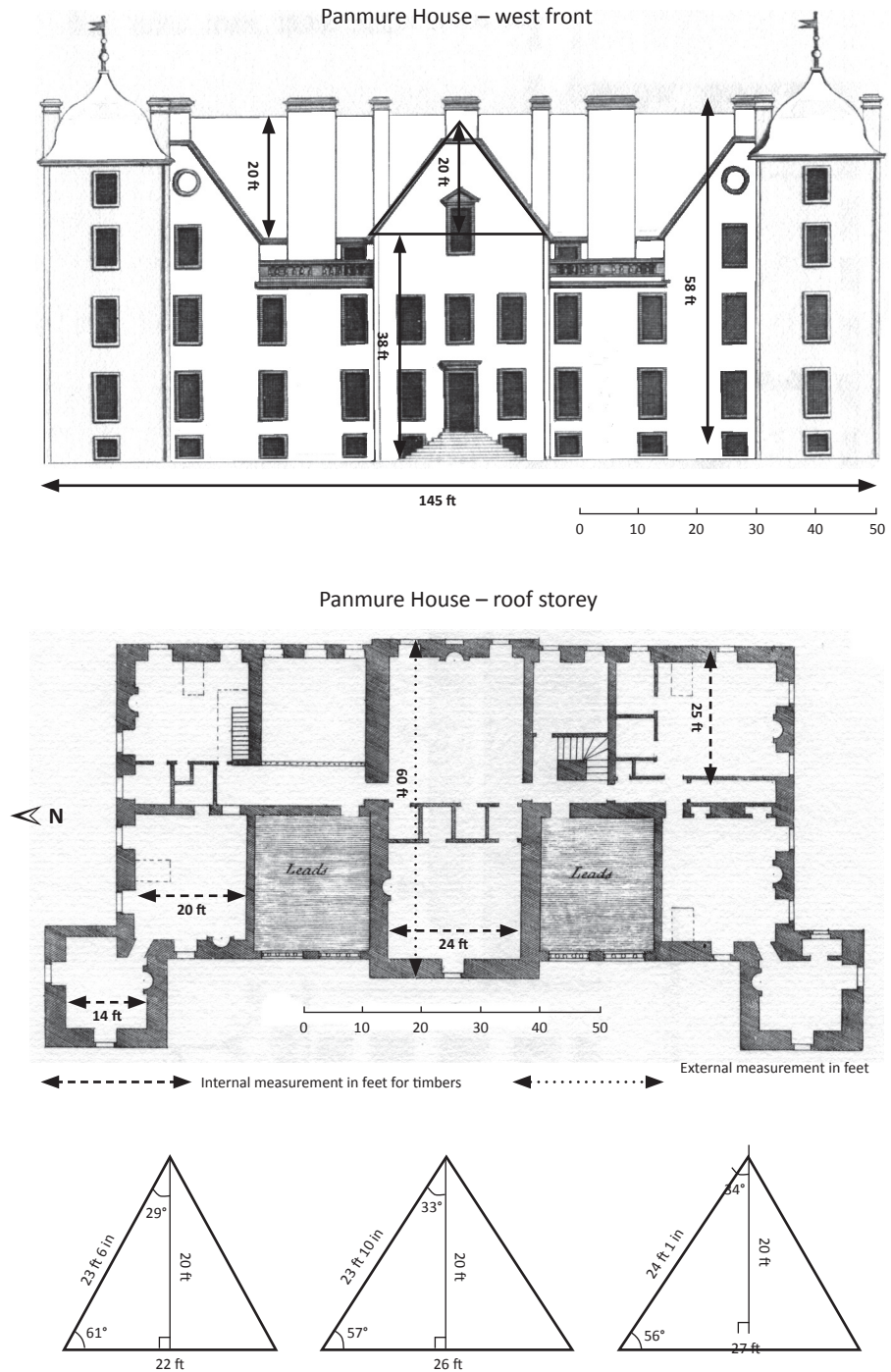
17 March 1668; approximately five weeks after the first contract had been agreed. Allowing at least three days travelling from Scotland to Norway, at least ten days if not more for collecting the cargo and two to three days sailing from Norway to Dundee, this means that the ship must have left port by 1 March at the very latest. This would have been a relatively fast turnaround, but comparable to similar cargoes collected by Scottish skippers from Ryfylke in Norway (Lillehammer 1977: 27; Brandal 1997: 84).¹⁰ What seems certain, is that the first cargo of timber was sent for, almost immediately, once the contracts for wright work had been signed.

The second cargo arrived at Dundee, in the *Rising Sun* of Leith, on 27 June 1668, 11 days after Baine's men had started work (NAS GD45/27/128). By the same reckoning, this vessel had probably left for Norway at the end of May or beginning of June. The timing of these timber cargoes would have been crucial to not only the completion of the building works, but also the fulfilment of the contract.

In total, the ships delivered to Dundee 160 trees 27ft (8.24m) in length, 259 trees 22ft (6.72m) in length and 340 sawn planks 15ft (4.58m) in length. The cargoes also included cuts of timbers 'whereof sixteen cuted shorter to severall lenth's' and 'of trees twentie seven foot of lenth wt their cuts which make out thirtie foot' (NAS GD45/27/128). This suggests that some of these timbers were trimmed to specific sizes at source in Norway, raising the possibility that the roof timbers were initially framed and built in Norway, before being dismantled and sent to Scotland (NAS GD45/27/128). The use of feet rather than the customary 'Norwegian ell' certainly suggests that a degree of accuracy was required for this timber bought for Panmure.¹¹ Typically, a timber cargo bought by Scottish skippers at the Ryfylke fjords, near Stavanger, in the first half of the 17th century would have comprised

of the following: several dozen 12 ell (7.5m) and 9 ell (5.7m) beams, several hundred sawn planks, firewood and barrel hoops. Such cargoes reflected standard timber products that were readily available from the Norwegian forest-farmers and their sawmills. Similar cargoes were recorded arriving at Dundee in the *Dundee Shipping Lists* (Marwick 1898; City of Dundee Archives 2005) with 12 and 9 ell beams the most popular lengths of timber imported to the town (Newland 2010: 59–77). In 1631, Andrew Fraser of Stanywode required roofing timbers from Norway for his building operations at Muchalls (Castle Fraser), as did Sir Thomas Urquhart of Cromarty for work at either Craigston or Cromarty, illustrating that it was common practice to send for roofing timbers from Norway. Examples of standard Norwegian sizes of 9 and 12 ell timbers have been found in the roof structures at Sailor's Walk in Kirkcaldy and at Gardyne's Land in Dundee (Newland 2010: 84–90). In the 1670s, the earl of Strathmore brought timber directly from Norway on board his vessel *The Lyon* for his building works at Glamis – also executed by James Baine – and these cargoes typically comprised of 9 and 12 ell beams, along with *drunton* deals or planks from Trondheim. Additional evidence from the Strathmore Muniments indicated that most carpentry and joinery work was carried out on site at Glamis, which was, in part, a consequence of building around, and making adjustments to, a pre-existing building, unlike Panmure or Methven which were, relatively speaking, new buildings (Newland 2010: 248–58).

Since both Norwegians and Scots were familiar with feet and inches, using them in preference to ells may have provided a greater degree of accuracy for the purchase of specific roofing components, and/or framing a roof structure off-site. This may have been the case at Panmure, as it was at Methven, wherein a merchant was 'given the bried and lenth' of



ILLUS 5 Approximate internal and external measurements of Panmure House, adapted from William Adam's drawings by the author. Estimated dimensions for the main roof timbers (© University of Strathclyde. Licensor <http://www.scran.ac.uk>)

the building's dimensions before sailing to Norway to buy the necessary roofing timbers.

Without physical evidence, is there any way to confirm that these timber cargoes were for roofing at Panmure, based on the documentary sources? For example, can the surviving plans or drawings be used to extract any additional information relating to timbers used at Panmure? Adam's drawings and elevation of Panmure in *Vitruvius Scoticus* (Simpson 1980: 129–31) provide the best indication of the overall dimensions of the house. From these, it is possible to estimate approximate sizes of the roof span, the height of the house and the internal flooring areas. These dimensions can then give an approximate idea of the dimensions and quantities of timber needed for the roof structure (illus 5a, b & c).

If the dimensions shown in illustration 5a and 5b are used, plus one foot overlap at each end (Gunther 1928: 240), the various lengths required for the roof structure would have measured from 17–27ft (5.2m–8.2m) in length. Thus 'trees' of 27 and 22ft (8.2m and 6.7m) were certainly of adequate lengths and quantities for some of the components needed for the roof structure.

Although these cargoes would have provided all the necessary timbers for the main roof, in June 1668 there were also substantial quantities of 'double trees' purchased by David Johnston from merchants in Arbroath. In total, 178 double trees were purchased (with no lengths noted) at a cost of £168 8s 8d, approximately 19 shillings each (NAS GD45/27/128). These were cheaper than the first cargo of Norwegian timbers, where each 27 foot tree cost £5 per piece and the 22 foot trees cost £1 10s each. The lower price suggests that the timber purchased from Arbroath (but probably imported from Norway) may have been the shorter length of 22ft. Such short lengths would not have been sufficient on their own for the longer rafters,

but may have been suitable for shorter rafters, collar beams, ashlar posts, sole pieces and joists for the two pavilions. The planks from the two cargoes delivered in 1668 would have been used as sarking for the roof, which had an important strengthening function during this stage of the building process.¹²

Slates

Further evidence that these timbers related to the upper stories and roof can be derived from the start date of slating work by Andrew Low, which began on 14 July 1668. The slates, according to the *Registrum de Panmure* (Maule 1874: xlv), were provided locally by the Laird of Guynd, and were probably Carmyllie slates. By August 1669, Low had received payment for '3 score rood of work', for completion of the slating of the main body of the house. In 1670, he received payments in May, August and November for the final work and slating of the bastions and bell house (NAS GD45/18/27/128).

Lead

The *Volume of Charges* record the plumber James Adamson working at Panmure from 1669 to October 1670, probably roofing the leads or viewing platforms on the west front of the house. This work used 26 rolls of lead, weighing more than 540 stone (3,429kg). The total costs of lead and his workmanship came to £1,601 11s 3d. A major part of these costs was the lead itself, both unwrought and wrought, which in total amounted to approximately 768 stone (4,887kg) (NAS GD45/27/128). By the winter of 1670, the house must have been more or less finished, and was certainly wind and watertight.

Flooring

The floors at Panmure were priced by the square ell of flooring deals or planks. The principal rooms, such as the Great Hall and

the Great High Dining Room, had floors with spans wider than 20ft (6.1m), requiring what Baine described in the first contract as, ‘the laying thereof upon the floore to be broken joynted on the jeasts’ (NAS GD45/18/571–3). This was a more complicated framing method used for flooring, requiring highly skilled and proficient workmen, and consequently they were more expensive to install. At Panmure, the workmanship for these floors was priced at 12 shillings the square ell and ‘flooring laid in the ordinary way’ was priced at 10 shillings. Baine was immensely proud of the floors he installed at Panmure, often citing them as examples of his superior workmanship. He later laid the same type of flooring at Holyrood and Brechin (NAS GD45/1616/15). Baine considered his floors at Panmure to be of such excellent quality that they appeared to be neither glued nor nailed to the joists, ‘But lyes as if were als close as they were all in one bourde’ (NAS GD45/18/588), a description that closely echoes Sir Roger Pratt’s (the king’s commissioner for the rebuilding of London) description of flooring: ‘Let them be fastened down with headless nails for that is much the neatest, and laid so close each other that they seem to be but one piece of timber ...’ (Gunther, 1928: 66).

Interestingly, when problems emerged with some of the floors at a later date and Baine had to re-lay them, he blamed Panmure for providing substandard timbers that had not been sufficiently seasoned (NAS GD45/18/588). Strangely, he did not consider that it might have been his professional responsibility to judge whether or not the timber was of suitable quality before his men used it.

Windows

The quantity and size of windows would have been an important means of visually conveying Panmure’s status to his visitors. The size and style of the windows for Panmure

were specified in some detail, with different dimensions stipulated for the upper and lower stories. All of the window ‘caisses’, except those on the lower storey, were to be made with ‘bound broads’ (shutters), and a small moulding, with ‘four below and tuo above for the glass, which are called glassbroads which caisses are to be double [chocked?]’ (NAS GD45/571–3).

Each of these windows was priced at £6 10s, and included ‘snecks’ and ‘iron rods’ which were to be decided upon by the earl as he saw fit. The total number of these windows and their size were not recorded here, but they were probably produced by the wrights on site at Panmure, where the timber and glass were delivered.

Baine presented an estimate with details and sizes for ‘12 great windows’ in the Great Hall and Dining Room at Panmure that were to have the typical Scots proportions of approximately 1:2. These were to be 8ft 6in × 4ft 6in (2.6m × 1.4m) in the lower six windows (although only five would be required since the entrance door on the west front would take the place of one of the windows); the upper six were to be 6ft 6in × 4ft 6in (2.0m × 1.4m). The price of each window was £8 and included the beading and moulding on the inner and outer window cases. In addition, there was one single window case of 7ft 6in × 3ft 6in (2.3m × 1.1m) or 4ft (1.2m) at £6, which may have been for the west front of the attic storey (NAS GD45/18/622).

The lower storey windows were of two sizes. Of those to be 3ft 6in × 2ft 6in (1.1m × 0.8m), Panmure decided which were to be made with ‘bound broads’ (hinged shutters) on both the lower and upper part of the window, and those which were to have shutters below only. Those with shutters both below and above were priced at £3 10s and windows with only shutters below were 10 shillings cheaper at £3. Smaller windows

sized 2ft × 1ft (0.6m × 0.3m) were to only have bound shutters and were priced at £2 each. There were no quantities recorded for the total number of windows required in this contract: instead they are priced per piece. However, a later document in 1669 referred to 67 windows being installed (NAS GD45/18/571–4), and there is an account from 1671 for 100 windows costing £650 (NAS GD45/18/594–5). Adam’s plans of Panmure illustrated 120 window apertures in total.¹³

Glass

John Masterton glazier, the son of His Majesty’s Master Glazier who had earlier repaired windows at Boishon (and whose role he later inherited), was paid for making and putting up glass windows in June 1668. Around the same time, 30 chests of French glass, costing £13 per chest, and bought at Dieppe, were delivered to East Haven (close to Panmure) via Montrose. Masterton also provided lead and some English glass from his own stock. His work using French glass cost two shillings six pence per foot;¹⁴ English glass was charged at four shillings six pence the foot. The work using the French glass was charged at a cheaper rate since it had been purchased by Panmure, and he therefore only had to pay labour costs; work which used English glass covered both costs of materials and labour. In total, the glazier’s work came to £816 15s 0d and Masterton received complete payment for his work in May 1670 (NAS GD45/18/27/128). Once the windows were installed and glazed, the house would have been weather proof and ready to receive interior fittings and decoration.

Painting of windows

A contract for painting the completed windows was agreed in July 1671 with Charles Wilson painter and burgess of Edinburgh (NAS GD45/18/591/1–4). It specified

25 bedchamber windows to be painted, including the casements and shutters, inside and out, priced at £10 per pair. Three coats of white leaded paint with linseed oil were to be applied, with marbling on some of the windows, a decision that Panmure made on site. Furthermore, the outside of the casements were to be painted with a ‘lead colour’, which was probably a gunmetal grey used to make the shuttered windows without glass appear glazed when viewed from a distance.¹⁵

Doors

The specifications for the door woodwork illustrate the different finishes intended for high and low status divisions in the house, ie public and private or unseen areas. The doors for the principal rooms would have been made with good quality wainscot. All double doors were to be glued on the facing side, and the other side was to be made with ‘sawen or whole deallis with one back forelip or to be planted with moulding on the face ... at the said Noble Earle’s [pleasure]’ (NAS GD45/18/571–3). The doors with mouldings were priced at £3 and the plain, glued doors with a ‘back forlip’ were priced at £2 10s. A later account describes several types of doors that probably relate to this part of the contract: of a total of 47 doors, 21 were planked doors, 10 were of four bound leaves (wainscot boards), 13 were plain, two were board and one was wainscot – probably a high status entrance at the foot of the staircase (NAS GD45/18/594–5).

Metalwork

Baine did not confine himself to the supply of timber and implementation of wright and plaster work at Panmure. He also shipped six weather vanes and six globes ‘ane great glob of copper for the knock [the gilding therof]’ from Edinburgh, and iron chimneys from both London and locally (NAS GD45/18/576–1 and 2).

Additional ironwork was produced by a number of local smiths. Alexander Blaire Smith provided ironwork for the building from 1 January 1668 until 20 January 1669. He was also responsible for the regular shoeing of the estate horses, which suggests that he had a forge either nearby or on the estate (NAS GD45/18/740). In January 1670, John Smith of Inverkeillor received payment for window bands (the metal frames around windows), and in June the same year he completed 109 pairs of window bands, latches and hinges. Three other local smiths (John Thomson, John Horn and Robert Allen) likewise provided ironwork in November 1670.

Probably the smallest but most significant items, in terms of quantity, used in building Panmure were nails. Several pages of accounts relate to the first contract listing the types, quantities and the producer's name, beginning 16 March 1668 and continuing until 1 December 1671. Some, for example, garron nails, were priced by weight. Single and double floorings, 'plenshone nails',¹⁶ door nails and others were individually counted. David Fluker, 'smith in the path head of kirkadie' provided initial supplies of single and double flooring nails, door nails, plenshone nails, small garron nails and garron nails. To begin with, local smiths provided only garron nails, but over time they also produced these different types of nails, suggesting they copied Fluker's nails. However, Fluker continued to supply nails, which suggests his nails were a specialist product, perhaps the type Baine required for his 'broken jointed' floors. In total, the cost for nails amounted to £1,406 3s 9d (NAS GD45/18/27/128).

SECOND CONTRACT – 11 MARCH 1669

The second contract with Baine for Panmure, dated 11 March 1669, specified interior

finishes, roofing the bastions (now referred to as pavilions) and a bell house for which the location has not yet been established. Baine's instructions were to make roofs for 'the two pavilions with ane splendour rooffe lyke to the bell house' (NAS GD45/18/566–4 and 571–4). The agreement instructed the lining of 67 windows and their mouldings (architraves), the roofs, fitting interior partitions and doors, cupboards, shelves and the great staircase. A total sum for the work of 4,500 merks Scots (£3,000) was agreed upon, and there was no penalty clause (NAS GD45/18/571–4).

The great stair

The staircase was to be of oak and '... after the ordre of the workmanship of the stair caise of donybryssoll [Donibristle] ...' owned by the earl of Moray (NAS GD45/18/566–4 and 571–44); a house which had been destroyed by fire and rebuilt several times in the 16th and 17th centuries. This instruction implies that Baine had to be familiar with the staircase already; perhaps it was even his own work. Since there is no documentary evidence to support this, all we can be sure of is that Panmure was citing a specific example for Baine to employ as a reference (Dunbar & Davies 1990: 273). This was a common practice in 17th-century Scotland, and probably a means for ensuring better precision in building works (McKean 2001: 270). There are very few examples of existing or recorded timber stairs dating from the 17th century in Scotland (Simpson 2007: 99–114) the majority having been made from stone, as at Holyrood or Thirlestane. Surviving timber examples found in great houses include Wemyss Castle, Kinross House and Callendar House. Preston Lodge in Cupar, Fife, built in 1623, is a rare example of a 17th-century town house with a timber stair dating from 1690. These are all open well timber staircases but the style of the balusters is quite different in



ILLUS 6 The oak staircase at Panmure photographed prior to the building's demolition in 1955. The oak knapholt bought from Baine was used for these balusters; the wainscot also supplied by him is evident on the far wall. Before the house was demolished the staircase was removed and sold at auction; unfortunately attempts to track it down have proven unsuccessful (© Crown Copyright: RCAHMS. Licensor www.rcahms.gov.uk)

each case, and Kinross has carved balustrades. The stair at Panmure formed an integral part of the route taken by guests, who having first entered the Great Hall, took the stairs up to the Great Dining Room on the principal floor. This arrangement was similar to John Mylne's design of Leslie House, built for the earl of Rothes, and both buildings had a transverse hall with the great stair, made from timber, at the rear.¹⁷

An analysis of timber purchased by Panmure from Baine during 1669 clearly reflects the work outlined by the second contract. The staircase features prominently and details were listed of the 'nyntie four great knapl for the ballisters of the great staircase' (NAS GD45/18/576-4), and 12 great trees, probably also for the staircase, purchased from Baine in April 1669. Fortunately, the staircase was photographed and removed before Panmure was demolished, and the pieces of knapholt used for the balusters can be seen in illustration 6. This timber was probably pre-cut to size and imported from Norway, but carved and shaped on site. Oak wainscot panelling can also be seen lining the walls of the great staircase. Additional materials mentioned in the same account from Baine included 1,690 dealls, costing approximately £900, and wainscot for partitions, shelving and doors at £450.

THIRD CONTRACT – 22 JUNE 1672

The 2nd earl of Panmure died on 24 March 1671, and at this time Baine acknowledged

the complete payment of all the wright and plaster work belonging to past contracts 'betwixt the deceist earle of Panmure' and himself (NAS GD45/18/594-1). The earl's wife, Jean Panmure, temporarily took over the affairs of building the house, and, in July of the same year, received an account from Baine for wainscoting and oaken deals, and a reminder for payment for the late earl's coffin in September (NAS GD45/18/594-10).

George, 3rd earl of Panmure, inherited in 1671, and in June 1672 Baine entered



ILLUS 7 An example of Baine's plaster ceilings executed during 1672 at Panmure (© Crown Copyright: RCAHMS. Licensor www.rcahms.gov.uk)

into a third contract (NAS GD45/18/600). It was divided into two. The first part specified the plaster work required for the principal storey of Panmure House, where the great rooms were to be decorated in rich fruit work according to *drafts*. The reference to drawn designs demonstrates that sketches of the proposed ceilings had been drawn up and agreed between client and contractor. These may have been prepared by Panmure himself, or Mylne, but more probably by Baine or one of his associated craftsmen.

Baine, who by now held the title 'His Majesty's Master Wright', was again to provide sufficient wrights and skilled craftsmen to carry out the work, '... upon his own proper charges' (NAS GD45/18/600). Bryce's alterations to the house in the 19th century replaced much of this work, and today the only evidence that remains are photographs taken just prior to the building's demolition in 1955 (illus 7).

The second part of this contract concerned new stables and other ancillary buildings, including byres and a washhouse. These may have been located on the later site of either the 'woman house' or kitchen court that formed the flanking wings built by the Bauchop brothers to designs by Bruce and Alexander Edward in the 1690s (NAS GD45/18/614/1/14; Mylne 1893: 232). As before, Baine was responsible for the wright work, which included putting up roofing, making storm windows (ie dormer windows), doors and porches, and laying the floor above the stables. The discharges list additional costs for making mangers, fixed beds, windows and doors (NAS GD45/18/588). There was a remarkable difference in the prices quoted for these works; the decorative and more skilled plasterwork priced at £2,000, costing considerably more than the more ordinary carpentry work required for completing the stable block at £133 13s 4d (NAS GD45/18/600).

In the first contract with Baine, Panmure had provided the wrights with 'fyre' for preparing their meat, and candles to allow them to work in the winter and 'ane hous to lye in' (NAS GD45/18/571-3). By the time of the third contract, however, Baine was obliged to provide not only some of the building materials, but also meat, drink and lodgings for his men. This suggests that because the house was now habitable, the family may have already taken up residence and the earl

no longer had any suitable accommodation for the wrights at Panmure.

As with the second contract in 1669, no penalty clause was included, suggesting it was more important for the initial building phase to be carried out promptly and on time. The secondary fitting out of the interiors and ancillary buildings were perhaps less critical once the main building was made wind and watertight. It would certainly have been inconceivable to undertake any decorative and costly plasterwork if the building had not been sufficiently weatherproof.

WILLIAM BRUCE AT PANMURE

Whilst signing the third contract with Baine in June 1672, the 3rd earl also entered into a separate agreement with Alexander Nisbet for building the West Gate that still exists at Panmure. This was to be done 'according to ye draught given by Sir William Bruce & muilds made for that effect. It is to be at least sevintein foot heigh' (NAS GD45/18/599-1 & 2). This suggests that the building was nearing completion, perhaps already inhabited by the 3rd earl and his wife, whose coats of arms feature on the gate posts. This was Bruce's first involvement with the earls of Panmure, and he was not, as implied by the *Registrum de Panmure*, responsible for the authorship of Panmure House (Maule 1874: 148). In 1671, Bruce had been made Surveyor General and was in charge of the building works at Holyrood, a post to which he had been promoted with the support of the Duke of Lauderdale. In the same year, he designed the entrance gateway for Lauderdale's wife, the Countess of Dysart, at Ham House, her main residence near London (Mylne 1893: 167-8 6 175). The stonework was prepared in Scotland and shipped to London. The gate at Ham House could have influenced the Panmure's decision to choose Bruce for their

gate, as they would have wanted a similarly prestigious entrance for Panmure.

The Panmures were also to consult Bruce in 1693, when the 4th earl wrote to him seeking advice for some revisions and additions at Panmure:

I shall be glad to have your opinion both as to the Offices which are yet to be build as also what reformationes you think might be made within the house ... (Mylne 1893: 232).

The earl of Panmure specifically referred to Kinross House as the guide for these new courts where the chimneys of the kitchen court were to be 'at least equall in hight with the easing of the great house and to make them off equall forme with those of Kinross' (NAS GD45/18/614/12).

These works were undertaken from 1694 to 1699 by Tobias Bauchop. He built the new domestic offices at Panmure – the flanking kitchen and woman's courts – and modified the house's internal arrangements in accordance to drafts and instructions drawn up and witnessed by Alexander Edward (NAS GD45/18/614/1–14).

FOURTH CONTRACT – 9 OCTOBER 1685

There was a gap of 13 years between the third and Baine's fourth and final contract agreed with the 3rd earl at Panmure on 9 October 1685. This detailed description of work to be carried out by Baine specified mainly finishing work such as fitting of skirting boards (washboards), panelling and lining work, doors, mouldings and architraves. It identified the rooms that had remained unfinished since 1672, when Baine had last worked at Panmure, namely the North Room, the Star Chamber, the North East Chamber, the Great Dining Room and stair – probably the secondary stair since the earlier contracts had specified the great stair.

As in previous contracts, Panmure was to provide the necessary timber and Baine was to provide everything else needed to complete the work within a time limit of three months. It was to be completed by 1 February 1686, for a total cost of £233 6s 8d; otherwise Baine was to pay 100 merks in compensation. This clause probably indicates that the earl had decided it was time for the new house to be finished properly and that the only way to ensure that this happened was to put pressure on his now main contractor – Baine. Coincidentally, the 3rd earl died on 1 February 1686, the same day as Baine's completion date. The finished house at Panmure then passed to the earl's younger brother, James Maule of Ballumbie.

CONTRACTUAL DISPUTES

Several disagreements between Baine and Panmure over additional payment and standards of work have been found amongst the papers examined. These disputes may have been symptomatic of the change taking place within building organisation, where there was a move away from the direct labour system to one based increasingly on contracts. Under the direct labour system, the builder/owner had undertaken the control of the building operations himself, using his own tenants as labour. With the development of contracts, the liability or financial risk associated with building operations was transferred either to an individual tradesman or to groups of them (Dunbar 1976: 9). There was, however, no clear transition from one system to the next, and elements from both systems of direct labour and contracting were used to varying degrees at Panmure.

Many of the additional costs that Baine claimed for at Panmure were linked to other

trades working at the house, and to requests by the earl himself for work to be redone in a different manner. It included assembling scaffolding around the bastions for the slaters, on the bell-house for the plumber, and for the masons when building dormer windows. After having put up scaffolding it had to be dismantled, as did the mason's lodging – twice – and then rebuilt. He made boards or tables for the plumber and glazier, ladders for the slater and assembled furniture for the earl's household (NAS GD45/18/588 and 594–6). Many of these items might have been expected to have been within the responsibility of a main contractor, for example, putting up scaffolding when required by other trades. Perhaps it was a sign of Baine's inexperience as a contractor that he had not accounted for these costs in his original estimates for the building works at Panmure, an oversight resulting in extra expense that he had to cover himself.

Baine also presented accounts for works where he claimed his work had been done to a much higher standard than was actually required of him. For example, he declared his work in the High Dining Room was 'six times better than he was obliged to do', and that Panmure had requested Baine's help with the 'ordour of the worke in his finest rouses' by doubling the order of the work and for which he was promised payment (NAS GD45/18/588). Baine went on to declare that his work laying the floor of the Great High Dining Room and the Low Parlour was of such a high quality that it had taken four times the work he was obliged to perform. He made similar claims for his plasterwork on the staircase, and all the rooms on the second storey (NAS GD45/18/588).

Such claims appear to completely disregard the original contracts with Panmure wherein prices were agreed at the outset, for example, flooring which was charged 'per

eln squared'. If the work took Baine longer than estimated, then unless it was for want of suitable timber that his men were delayed, it was not Panmure's responsibility. The costs for lining the Great Dining Room were originally agreed within the 1669 contract that totalled £3,000; likewise costs for plastering the principal rooms were included in the 1672 contract, totalling £2,000. If Panmure had requested additional wood and plasterwork for these rooms then Baine would have been wise to have obtained Panmure's authorisation and revised costs in writing before executing the work.

Baine's claims for additional work also suggest that several of the floors had had to be re-laid due to poor quality timber. Further problems arose with the joisting work of the pavilions. Since Panmure had been obliged by contract to supply the necessary timber, Baine pointed out that he should not be liable (NAS GD45/18/588).

The four contracts agreed between Panmure and Baine came to a total of £5,336, in addition to piecework for all the window cases, doors, flooring and roofing of the first contract. The first contract based on piecework may have been the most problematic of the agreements between Panmure and Baine. It had neither stipulated the total number of windows and doors, nor total areas of flooring and roofing to be undertaken, whereas the later contracts agreed a final price for the works as specified. In total, Baine presented accounts of approximately £11,500 and signed receipts for approximately £15,300 of money received from the Panmures. On 26 April 1671, Baine acknowledged payment of

all wright work and plastering of the new hous of panmour and all other accompts dew to me be the deceast earle of panmour and the new earle ... only the soume of twa thousand seven hunder and sextie thrie pund Scots money which is yet resting to me ... (NAS GD45/18/594).

The final payment of £2,763 was finally made to Baine on 11 March 1672 (NAS GD45/18/594).

ACQUISITION AND USE OF TIMBER

The detail concerning timber work recorded in the Panmure contracts and accounts clearly demonstrates just how crucial timber had become for the design and build of Scotland's great houses in the 17th century. That Panmure employed Baine, Scotland's foremost wright and timber merchant, also supports this conclusion. The contracts stipulated that Panmure had to supply all the necessary timber for the building works, including imported timber. Other things being equal, he would have preferred the most economic means of supplying materials, which would have been timber from his own woods (and which Baine's men were forbidden from felling). If his own sources of timber were not adequate in quantity or quality, then buying timber from local merchants, or directly importing his own, would have been his next preference. Purchasing timber from Baine was

likely to have been his final option; although the most reliable source, it was also probably the most expensive.

Table 2 presents a summary of the different categories of timber bought for Panmure, demonstrating the diversity of timber required for building construction and finishing work. Nine main types of timber are evident, however over 20 different timber cuts were identified (Newland 2010: 367–9). 'Trees' generally referred to baulks used for long span timbers, including rafters or joists, similar to the cargoes of the two ships that brought roofing timbers from Norway for Panmure. The total cost for these roofing timbers came to approximately £2,251; measured per foot these were considerably more expensive than those bought from Arbroath, where a 22ft (6.7m) tree cost approximately 30 shillings a piece and 27ft (8.2m) trees cost £5. The higher prices may indicate that the timbers imported directly from Norway were prefabricated specifically for the roof structure at Panmure, the extra workmanship for trimming timbers, framing, numbering and dismantling being included in the cost (NAS GD45/27/128).

TABLE 2
Timber summary

<i>Timber cut</i>	<i>Quantity</i>	<i>Total cost £ Scots</i>
Deals – ordinary, thick, fine	8,009	3,701
Double trees – long	398	529
Great trees – ordinary, great, small	164	739
Trees – fir, 22ft, 27ft	404	1,227
Knapholt – ordinary, great, great long, small	1,054	909
Wainscot – ordinary, deals, short	451	1,456
Planks – oak, 15ft	518	837
12 ells (approx. 26ft)	38	36
9 ells (approx. 18ft 6in)	30	30
		9,464

Documentary evidence regarding the purchase of roof timbers for Methven Castle also points to this possibility of bespoke roof structures being purchased from Norway; at the same time, evidence from Sailor's Walk in Kirkcaldy and Gardyne's Land in Dundee demonstrates that the standard dimensions readily available from Norway such as 9 and 12 ells were also used for roofing (Newland 2010: 84–97).

From the quantities of timber purchased, and as one would expect, it is quite clear that the estate at Panmure was not able to provide all of the timber required for the building works. Where possible, structural timbers from Boishon would certainly have been re-used and whatever was not suitable could have been used for scaffolding. At the end of an estimate for wright work by James Baine, there was a note indicating that the whole timber required for piece work was an open-ended financial commitment requiring the timber 'to be sawen upon my Lordes expens, That both the sd sawen timber and nyr timber may be fitly and tymously Be laid readie to the work' (NAS GD45/18/622).

This indicates that sawyers at Panmure prepared some of the timbers on site, for which there must have been either saw mills, pits or trestles on the estate. It also implies that some timber was supplied from the Panmure estate, probably for scaffolding and also for boards, which, once sawn, were then 'laid' for seasoning. However, the completion of a house on such a scale could not have been successfully completed without the use of foreign timber, imported from Norway, the Baltic and the Netherlands. Oak for doors and panelling was not available in Scotland, and the quality of domestic pine was generally considered inferior to imported timber for building structures. The preference at Panmure was for imported long span timbers or great trees, as the cargoes from Norway illustrate.

The types of timber described in the Panmure accounts referred mainly to various types of 'trees' described as single, double, long double and great. Whilst there is little indication of the exact dimensions involved, it demonstrates that the thickness was of prime importance. Adjustments to length could easily be carried out by carpenters on site, but little could be done to compensate for the wrong breadth of baulks. Large quantities of deals or planks were described as short, long, thick or fine. In the two cargoes from Norway, the length of planks was 15ft (4.6m).

The oak timber used at Panmure included planks: small, great and long knapholt; 'wainscot daills' and 'short wainscot' (NAS GD45/18/576–2) – probably for panelling, windows, doors, and shutters. The exceptions were the oak pieces of knapholt or 'knapl' that Baine specifically supplied for the balusters of the great staircase at Panmure. In this case, the term knapholt probably referred to relatively stout and squared-off pieces of oak that were large enough to have balusters carved from them, rather than the more common definition of knapholt as cut and squared planking, or barrel staves. Such pieces of oak knapholt may have originated in Norway, and were certainly recorded arriving in Dundee during the 1640s. Other sources could have been either the Baltic – possibly from a German source such as Bremen – or the Netherlands, where the timber, particularly finer wainscot, could have been processed using their more advanced wind-powered sawmills.¹⁸

The *Volume of Charges* recorded payments to timber merchants from Arbroath, Dundee and Edinburgh. One of these, James Burgh, was a Dundee merchant who made regular voyages to Norway and also supplied timber for Strathmore at Glamis (NAS GD45/18/602) (Newland 2010). The earl of Panmure's reliance on several timber suppliers suggests

that Baine may have not been able to provide all the necessary timber required from his timber yard at Leith. This is hardly surprising since the building works at Panmure coincided with Baine's busiest period of work at several sites, including Holyrood, Glamis and also Tweeddale's properties. The provision of timber for Holyrood alone may have already begun to seriously impinge on Baine's stockpile (Newland 2010: 103–56).

In each year from 1668 until 1670, Baine supplied timber to Panmure, which included deals of oak and pine, wainscot, knapholt and occasionally trees or baulks. In 1668 and 1669, he supplied deals, wainscot and knapholt. In April 1669, approximately 1,480 deals were put by and stacked in Dundee (NAS GD45/18/576–4). In July 1670, he was responsible for carrying wainscot and oak deals from the yard to the boat, and probably refers to timber being brought from his own stocks at his yard in Leith to Dundee (NAS GD45/18/588). Most of this timber would have been used for the interior fittings carried out by Baine and his workmen at Panmure, and implies that at this time, he still had access to his own stock of good quality oak deals and boards from which he selected whatever he needed for his finer finishing work. Occasionally, Panmure bought long span timbers from Baine, but it was probably more economical for Panmure's chamberlain to purchase standardised long span timbers more locally, from either Dundee or Arbroath, or directly from Norway through skippers or merchants.

The total costs for timber amounted to approximately £10,000, of which the roofing timbers alone accounted for just over 25%. Baine also received payments for timber amounting to at least £2,100, where he was named as supplier, and possibly a further £1,000. There is no evidence to indicate how much timber Panmure was able to supply

from his own estate, but the restrictions on felling suggested that it was of limited quality and quantity, or that the trees were a feature of the landscape he wanted to preserve. This implies that the majority of timber used for the completion of Panmure was purchased from abroad, with Norway being the primary source at that time (Newland 2010).

CONCLUSION

The building of Panmure was clearly meant as a demonstration of the earl's rank within the Scottish nobility, and his house contained a number of new features. It was designed from the outset by John Mylne, with rooms wider than the customary 20ft (6.1m), and built in a double pile format. This provided Panmure with public rooms on a grand scale, floored using Baine's specialist method of framing 'broken joynted on the jeasts' to create an even surface that appeared as if it was made from a single board. Finished with fine panelling and plaster work, these principal rooms were reached via an impressive oak stair. Perhaps more radical was Panmure's semi-subterranean basement that was probably inspired by an English example.

The sequence of building activities, purchase of materials and employment of tradesmen emerge quite clearly from the contracts and discharged accounts. The building works with John Mylne, and Alexander Nisbet as Master of Works began in April 1666, with mason work continuing until September 1670. Baine's wright work commenced in 1668 and continued until 1675. The final fitting out of the interiors of the new house at Panmure then had to wait until 1685 for the final contract with Baine, which was complete, as agreed, by 1 February 1686.

The initial contract between the earl of Panmure and John Mylne was not limited

to mason work; he was responsible for the ‘maner and forme’ of the ironwork, wright work, slate work, glass work, plumbing work and plastering. As such, he was originally employed as a main contractor; as an accomplished and prosperous architect, with the additional status of Master Mason to the Crown, he was in an ideal position for such a task. However, John Mylne’s death 20 months after the work had started at Panmure meant that the organisation of the remaining building works had to be reconsidered. It was quite natural for Mylne’s deputy, Alexander Nisbet, to continue in charge of the remaining mason work. But unlike Panmure’s earlier contract with Mylne, Nisbet’s contract did not extend to authority over any of the other building trades. Instead, Panmure continued the work with separate contracts for mason work and wright work. Baine’s contracts were concerned only with wright and plaster work, although the surviving accounts demonstrated that his function was not solely limited to these tasks.

Panmure also entered into separate agreements with other tradesmen such as Charles Wilson, painter, and John Masterton, glazier, with separate accounts for other work such as iron work and slating. Costs were calculated in a number of ways: the masons and wrights were paid daily rates, but the costs for floors and roofs were calculated by the square ell, and windows were charged per piece, according to size. Following the death of Mylne, the burden of administrative work associated with building works was not transferred to another tradesman or equivalent main building contractor. Instead, Panmure combined direct labour with the newer contract system. This resulted in a hybrid of the two methods wherein the earl relied on his kinsman and chamberlain, John Maule, to manage the finances, supply of materials and their transport, and payment of wages

to tradesmen – including James Baine (NAS GD45/27/128).

This method of organisation may have been partly responsible for the ensuing disputes over accounts that arose between Panmure and Baine. John Maule’s experience of building work probably related to much smaller-scale works concerning minor repairs and modifications to properties on the estate. Panmure, however, was a building project of some scale and complexity. The loss of the highly skilled and experienced Mylne as main contractor and architect meant that there was probably less coordinated control of the different trades precisely at the point when it was required. The fact that Baine’s ‘extras’ were often related to work concerning other trades seems to support this. It also suggests that Baine had difficulty estimating prices for work and materials accurately, and that this may have been due to his own inexperience of working as a contractor on a major building scheme.

The contracts between Panmure and Baine agreed, as was common, that Panmure would both supply and transport the timber, although very little appears to have been supplied from the estate itself. As a timber merchant, Baine could have monopolised the supply of timber to Panmure, but did not do so since his employment did not prevent local merchants from Dundee and Arbroath supplying timber as well. Two cargoes came directly from Norway, with timbers that were probably ordered specifically for the roof structure at Panmure. These timbers, and those generally provided by local skippers and merchants, were long span timbers with a particular emphasis on the width of baulks and also deals for planking and sarking. Although Baine did supply some long span timbers for Panmure, for the most part he supplied oak timber such as knapholt, wainscot boards and deals from his timber yard at Leith. The house at Panmure

was Baine's first prestigious undertaking for a member of the Scottish nobility; it coincided with his appointment to His Majesty's Wright and marked the peak of his career.

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APPENDIX

GLOSSARY OF TIMBER TERMINOLOGY AND PRODUCTS

This glossary provides some definitions and discussion of the terms encountered in the course of this study of Panmure. In general, the following terms relate to processed timbers in Scotland and Norway used for building construction – an exception being 'undressed tree', a log that had neither been squared nor had the bark removed. In all other cases, any known dimensions of specific timber products have been included, although no contemporary 17th-century documentary references were found for Scottish dimensions of boards and planks. Some preliminary explanations of the descriptive terms used in Scottish and Norwegian sources are also provided.

Board, bords, sagbord (Norwegian): sawn boards, 'a piece of timber of undefined length, more than four inches in breadth, and not more than two inches and a half thickness ...' (Gwilt 1867: 1159). According to the Oxford English Dictionary (OED), a

board is technically distinguished from a plank by its thinness: 'it ought to be more than 4 inches in width, and not more than 2½ in thickness, but is generally much thinner' (OED Online).

Bjelkar, bielcker (Norwegian): squared beams or baulks of between 7 and 16 ells in length. Pine beams or baulks were usually either 12 or 9 Norwegian ells long, and approximately 8 inches square (Brandal 1997: 87).

Collar beam, collar-baulk: horizontal timber beam, acting as a tie, fixed to a couple, upper tie (Pride 1975: 32).

Couple: (a) rafter, (b) one of pair of sloping rafters forming roof sometimes referred to as couple-leg, (c) as (b), with the addition of horizontal tie connecting extreme lower ends of rafters, simple truss, (d) as (b), with the addition of timber 'legs' which either stand on comparatively low wallhead or are carried down through wall thickness to secure anchorage in the ground (Pride 1975: 33).

Dails, deal, sagdeler and deler (Norwegian): sawn planks (Pride 1975: 35). Norwegian 17th-century regulations relating to dimensions of planks stated the minimum width of log allowed to be sawn was the 'seven board baulk' – ie at least seven boards were to be sawn from each undressed log. Drammen was the leading exporter of planks in late 17th-century Norway, and an ordinary squared Drammen's board measured 10 or 12ft in length, at least 9 in broad and 1½ inches thick (Schreiner 1938: 115–38) and each log produced on average six to eight planks. Kristiania (Oslo), the second largest exporter of planks, produced its own characteristic sawn timbers that were notably thinner than those from other areas. Here, about 10 planks could be sawn from a 1-foot-diameter log as opposed to the six to seven

planks produced at Fredrikshald, Fredrikstad and Skien in the same period (Schreiner 1938: 115–38). Boards produced at Hjelmeland in Ryfylke were on average ‘8 feet long, 8 inches wide and 1 inch thick’ (Brandal 1997: 87). At Sailors’ Walk in Kirkcaldy, pine ceiling boards, still in situ and dated to the mid-17th century, were recorded in varying widths of between 7 and 9 inches, with a thickness of 1 inch (Addyman Archaeology 2006).

Drunton: eg ‘Drunton deals’, referring to a source in Trondheim, Norway.

Eik (Norwegian), **aiken**, **aiken tymer**, **quercus**: oak timber.

Furu, furre (Norwegian), **pinus sylvestris**: pine timber, sometimes called Scots Pine, red fir and yellow fir; one of the most durable of the pines. It has also been known as Memel, Danzig and Riga fir. It grew in Norway, Sweden, Russia and in other parts of Northern Europe. It is also a native of the Highlands of Scotland (Tredgold 1820: 515).

Garron, garroun: a length of square timber, beam. Also **garronis**, small pieces of cross-timber used in roof construction (Pride 1975: 43).

Geasts, geist, jeasts, joists: timber beams that rest on the walls of a building and on to which the boards of a floor or lathes of a ceiling are fixed.

Huggenbord (Norwegian), **cuttet tymer**, **split timber**: timber which had not been sawn, but cut by hand with an axe or split. Also refers to timber which had either been squared off with an axe or adze, or trimmed to specific dimensions.

Kapper/kaper-sparrer (Norwegian), **Keper (Dutch)**: a roof spar, similar to the Scots caber. The *keper* may refer to cut timbers rather than sawn (Bugge 1925: 431).

klapholt, klappholz, knappald, knaphold, knapbord, knapboard, knaphard, knapholt, knappet (Norwegian, German and Scots), also **clapboard**: frequently defined as ‘small sizes of split oak used for wainscot ... although strictly cut and squared planking which was not so good quality as wainscot’ (Pride 1975: 50; Robinson 1996: 346). Also defined as oak staves used in making casks or barrels, but not used exclusively for this purpose. It came mainly from Königsberg, Danzig and Riga (Attman 1973: 17). Bugge described it as ‘wooden staves not more than three inches thick or over seven inches broad and not more than 63 inches long’ (Bugge 1925: 340). A decree from *Norges Rigs Registranter* dated 9 April 1643 (Lange 1861: 269–75) described it as *Knapholzstømmer af fyr* – which, directly translated, means *knapholt* ie clapboard timber of fir (pine) – and *Fyr-knapholt stave*, meaning pine clapboard staves (Bugge 1925: 341). This lack of clarity regarding the definition of *klapholt* and *knapholt* means that when the term is used its meaning has to be considered within the full context of the original document or source.

Krumholdt (Norwegian): crooked timber. Specific examples found in the Nedstrand Toll Lists are described as 5 ells long and 5 inches thick, probably referring to crooked knees.

Lekters (Norwegian): lathes or battens used for slating, tiling and plastering (Gwilt 1867: 992; Bugge 1925: 346).

Raffte bielcher, ruvertræ (Norwegian): rafter beams.

Ruverbord (Norwegian): *ruv* means roof; probably referred to sarking boards.

Sarking (Scots): to cover the rafters of a roof with wooden boards, line a roof with wood for the slates to be nailed on (Robinson 1996: 581).

Skailie: roofing, but also used to describe wooden and stone shingles, sandstone (Carmyllie) and blue slates (Pride 1975: 69; Walker 2001: 163–71).

Skottebjelker (Norwegian): beams destined for Scotland (Bugge 1925: 348; Lillehammer 1990: 104; Lillehammer 1999: 18).

Skotsesperer (Norwegian): Scottish spars, ie spars or poles destined for the Scottish timber markets.

Smaa schottebielcker (Norwegian): small Scottish beams, denoting the timbers' intended market. Short beams of 6 and 8 Norwegian ells produced in Ryfylke during the 1630s.

Smale (Norwegian): small or narrow.

Sparris: a general term for all masts, yards, booms, gaffs, and poles of moderate length and thickness and also an undressed stem of fir or similar wood under 6 inches in diameter (OED Online).

Timber cladding: vertical boards applied to the exterior of buildings, normally of oak or Scots Pine (Walker 2000: 69–110).

Tree: a beam. It can refer to 'a tree felled for timber, the trunk of a tree used as a timber, passing into a baulk or beam of wood put to various uses' and also 'a baulk or beam of wood supplying a major element of a structure, a rafter, post, stake, mast etc' (Pride 1975: 78; Walker 2005: 159). Single/double treis: beams of different thickness, dimensions unknown.

Treenail, trenail: cylindrical wooden pins or pegs of hard wood used in fastening timbers together, especially in shipbuilding and other work where the materials are exposed to the action of water, eg roofing (OED Online).

Wainscot: timber used to line walls with boards, generally of oak, and refers to oak in either sawn or wrought state (Pride 1975:

80). A good quality imported oak (DOST Online) chiefly used for fine panel-work; logs or planks of this oak; oak boarding for panel-work (OED Online). Imported from Danzig, but also Germany where oak timbers were shipped down the Rhine to the Netherlands for processing at Amsterdam and Rotterdam.

Long and short wainscot: probably oak timber, but dimensions unknown.

Wainscot wood: any species of wood that was suitable for lining walls with panels. In the 16th century it was usually oak, but later in the 17th century either oak or pine was used (Haynes 1921: 154). The term was also used to describe furniture made from imported oak (Bowett 1988: 311).

NOTES

- 1 It should be noted that whilst Adam's drawings and plans of Panmure offer us a close representation of how the house may have originally appeared, they cannot be relied on as absolute evidence for architectural details. Recent evidence from the RCHAMS survey of Leslie has shown that the *Vitruvius Scoticus* elevation does not relate closely to the plan as uncovered on site.
- 2 Current research on timber used in buildings tends to focus on building archaeology and dendro-analysis to date and provenance timbers in situ. This work had mainly been carried out on medieval buildings where the principal construction timbers are commonly a mixture of Scottish and Scandinavian or Baltic oak, although more recently Norwegian oak has been positively identified (Crone & Gallagher 2008: 249–55). As more data is accumulated for both native and imported timbers, this method of analysis will contribute enormously to our understanding of the use of imported timber and its significance within the building industry (Crone 1998; Crone & Fawcett 1998; Crone, Fawcett & Hall 2000; Mills 2000; Crone, Grieve, Moore & Perry 2004).
- 3 *The Volume of Charges* (GD45/27/128) is a record of the craftsmen and materials used at

Panmure. The author was probably John Maule, the earl of Panmure's chamberlain. Following the death of John Mylne he appears to have taken over responsibility for the administration of the building operations, more or less as a master of works. His accounts include details of quantities and costs of building materials such as stone, timber, lead, glass, slates, ironwork and nails. It also records the names of and payments to craftsmen, plus merchants, as well as the details of the cargoes delivering timber to Dundee.

- 4 Tree: a beam. It can refer to 'a tree felled for timber, the trunk of a tree used as a timber, passing into a baulk or beam of wood put to various uses' and also 'a baulk or beam of wood supplying a major element of a structure, a rafter, post, stake, mast etc'. Frequently used in compounds, eg roof tree etc. Old English *treow*. Single/double treis: beams or baulks of different thickness, dimensions unknown (Pride 1975:78; Christian & Mackay 2005: 159). Other specialised terms are included in Appendix I: Glossary.
- 5 Gesting gloves: modern day usage refers to a glove or sleeve protecting the end of a joist, and there is evidence in Scotland of paper dipped in bitumen being used to protect the ends of joists from rot (Neil Grieve pers comm). Medieval masons were permitted the privilege of wearing gloves to protect their hands when working with stone. However, Airs (1995: 122) also referred to gloves being provided as protection for carpenters hoisting roofing frames into place.
- 6 It is these which are similar to Balcaskie, but the written evidence (NAS GD45/18/614-12) actually cites Kinross as a reference for these buildings.
- 7 Imported timber destined for Edinburgh would have landed at the Timber Howff or Bush (Bourse) at Leith. By the late 16th century, the storage of timber had begun to cause a serious problem on the streets around the shore. There was no charge for its storage, but there was no security either, and this became an issue for foreign ships landing timber. Local importers could store their timber in their own close or yard. In 1578, to resolve this difficulty, the Burgh purchased an area known as Ramsay's Bastion, and this eventually became known as the Timber Bush. It was extended in 1643 and further changes followed in 1658 when it was divided into secure sections or yards, leased out by Edinburgh burgesses. By 1676, when Baine would have been making use of the Timber Howff at Leith and where he probably had his own yard, the storage costs per year ranged from £3 for 100 pieces of wainscot to 1 shilling for individual oak boards or a single great fir timber (Mowat 2003: 147-206)
- 8 Once Baine had acquired status as a merchant burgess in Edinburgh, he would also have been able to operate as a merchant in the timber trade. The Records of the Parliaments of Scotland record an *Act and recommendation in favour of James Bain*, dated 17 July 1695, wherein he had 'at the time of the building the palace at Holyroodhouse and reparations of the castles of Edinburgh, Stirling and the Bass, an opulent fortune of about £50,000 Scots worth of timber in the Buss of Leith' (Brown 2007-2009: 1695/5/219). Baine's extensive timber stocks may have been one of the key reasons for his appointment as His Majesty's Master Wright employed for carrying out work at Holyrood in 1671. Recent research has found that he was associated with at least 11 building operations for members of the Scottish nobility, as well as modifications and repairs for the Crown at Holyrood, Edinburgh, Stirling and the Bass Rock (Newland 2010: 137).
- 9 '... David has given bried and lenth to a merchant that is gone to Norway to be roofing for my loves bonny strong house ...', letter from Anne Keith to her husband Patrick Smythe 1681, Perth Museum and Gallery Archive 873 (BOX 449).
- 10 Research by the Norwegian historian Arnvid Lillehammer has focused on the timber trade with Scotland from Ryfylke in the Stavanger region on the south-west coast of Norway. It was from here that many Scottish skippers, particularly from the east coast purchased their cargoes 'at the woods'. His research based on local customs books from 1601 onwards gives a valuable insight into the world of *skottehandelen* (the Scottish Trade) as it is referred to in Norway. Lillehammer details how timber was processed and purchased by Scottish skippers and that this trade depended on the advent of water-driven sawmills in Norway. Similar research by Brandal focused on an area close to Stavanger known as Hjelmeland.
- 11 The Norwegian ell originated from the practice of taking a measurement of the forearm from elbow to fingertips. It was standardised from 1541 to 1683 for all trade goods in Denmark and Norway, and measured 63.3cm. On 1 May 1683, a new ell was introduced in Norway, equalling

- two Rhineland feet and measuring 62.8cm. The Scots ell (37 inches) was much larger at 94cm and became the national standard in 1661, although first recognised as the Edinburgh standard in 1624 (Connor, Simpson & Morrison-Low 2004: 35).
- 12 In Scotland, when slates were used, roofs were first covered with sarking boards to which slates were then nailed without timber battens. This makes for strong wind-resistant roofs, often with a steeper pitch than those found in England, for example.
 - 13 William Adam's drawing of the west front probably illustrated windows inserted by William Eizat of Edinburgh. In 1714, he replaced the earlier windows with 37 sash windows on the principal floors (NAS GD45/18/759/3–6).
 - 14 A glazier's foot equalled 8 inches in England and 9 in Scotland. An act was passed in 1664 to introduce the statutory definition of the foot as 12 inches in order to control measurements (Connor, Simpson & Morrison-Low 2004: 47–50).
 - 15 Wilson painted and gilded the family's coat of arms on a chimney piece and painted the parlour in 'princes' wood. He was also employed for the funeral preparations for the 2nd earl in 1671, and he drew the arms for the plumber for the lead coffin and blacked some chairs and batons, and painted/marbled a stool and clock case. With thanks also to Michael Pearce for furthering my understanding of this contract and related accounts.
 - 16 Plenching (plenshone): large nails used for flooring (Pride 1975: 60). *The Dictionary of the Scots Language* also refers to 'Half ane hunder plenschour naill to naill on the lathing' (<http://www.dsl.ac.uk/>), which implies they were also used for lath and plaster ceilings.
 - 17 This arrangement was similar to Chevening. Lauderdale's houses at Thirlestane, Lethington and Brunstane were laid out in enfilade with the stair at the vestibule (Charles Wemyss pers comm).
 - 18 This was a similar situation to that which Baine found himself in at Holyrood for much larger sums, wherein he had had to pay his men himself whilst waiting for his accounts to be settled by the Crown.
 - 19 In 1672 there is an additional contract agreed between James Baine, Alexander Nisbet and the earl of Kinghorn. Unfortunately, the site is unknown as part of the manuscript is missing,

but may be Glamis or Lyon. The contract refers to work done at Panmure, 'timber bound worke as the parloure of Panmure'. Baine was required to do plaster work and provide Nisbet with the timber necessary for scaffolding, and to receive and dispose of the old 'gesting flooring from stentiells, dorr locks ...' (Strathmore Muniments 148/1/183).

- 20 Lauderdale obtained timbers from Bremen (Dunbar, 1976: 206).

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- City of Dundee Archives*
 Dundee Shipping Lists CD (2005)
Dalhousie Muniments
 NAS GD45 Correspondence, accounts and contracts relating to the building works at Panmure House
 Strathmore Muniments
 Lamb Collection, Dundee City Library
 Nedstrand Toll Lists, Karmsund Folkemuseum, Norway
 Perth Museum and Gallery Archive
 Register of Sasines

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