

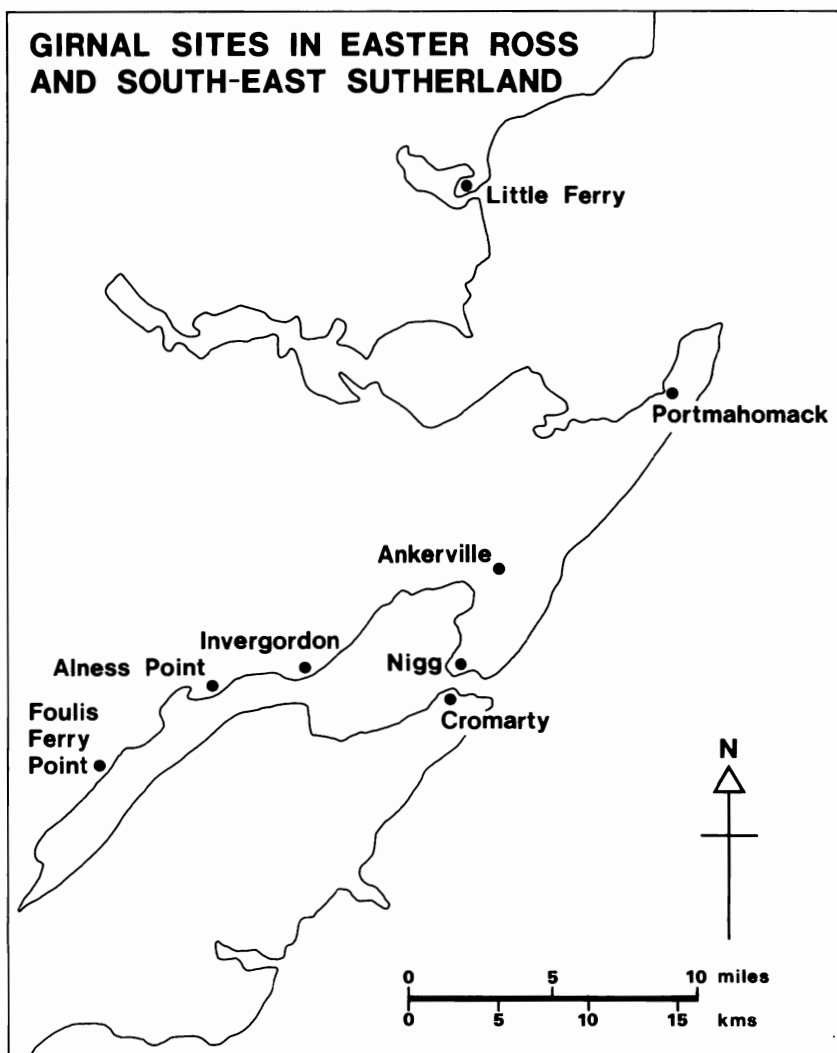
# LATE SEVENTEENTH AND EIGHTEENTH CENTURY ESTATE GIRNALS IN EASTER ROSS AND SOUTH-EAST SUTHERLAND

Elizabeth Beaton

The fertile coastal plains of Easter Ross and the eastern parts of Sutherland were good corn growing land in the eighteenth century and earlier, with the added advantage that any surplus could be exported by sea from the various small harbours and beaches, particularly from the Cromarty Firth which afforded shelter for shipping. Sea transport was all important; roads were not well developed nor were wheeled vehicles common until the early nineteenth century, when Thomas Telford and the Commissioners for Highland Roads and Bridges constructed roads north of Inverness, bridging the Conon River at Conon Bridge and the Kyle of Sutherland at Bonar Bridge. Maritime transport for bulk goods was not usurped, however, by these new roads, but rather by the railways, established between Inverness and Sutherland in the 1860s and 1870s. Until then a surprising number of craft plied between local and national coastal ports, and further overseas.

## THE NEED FOR GRAIN STORAGE

Until the end of the eighteenth century, and even into the nineteenth, agricultural rents were paid in service and in kind, and of all the commodities grain, bere barley and oats, with some wheat, was the most important and the most common. In turn, farm servants received barley and oatmeal as a recognised portion of their wages; public servants such as schoolmasters and ministers were also paid some of their salary or stipend in this form by their Parish Heritors. Such bulky wealth obviously required storage, a requirement which increased as agricultural improvements gained momentum during the latter half of the eighteenth century. Improved seed, better drainage, more effective land management, all combined to create a surplus for landlords on the larger estates. The estate giral or storehouse was constructed to house this wealth, pending its re-issue as wages or its sale to realize cash. A number of these fine and functional storehouses survive around the coasts of Easter Ross and south-east Sutherland, at Alness Point (NH 656679), Ankerville Corner (NH 818744), Foulis Ferry Point (NH 599636), Invergordon (NH 709685), Little Ferry (NH 801957), Nigg (NH 796687) and Portmahomack (NH 915846), a remarkable grouping in Scottish as well as in local terms [Fig. 9.1].



*Fig. 9.1* Map of sites of girnals in Easter Ross and south-east Sutherland.

Accounts survive for 'Barley received at the Store-House of Foulis' in 1784 (being the crop of 1783), and vary in quantities from the tenant at the Mains of Foulis who paid ninety-eight bolls one firloft, down to John Ross, slater at Lemlair, two bolls, and David Mackay, one boll one firloft, adding up for the year to one hundred and sixty-nine bolls two firlofts. Further accounts for 1795 show 'Note of Barley and Oat Meal given into the Store House of Fowlis by Tennants on the Estate of Fowlis, the crop of 1794'. Items include various recipients who, 'on Munro's Orders', were given meal or barley, including the Minister, Mr Harry Robertson, who received thirty-eight bolls and the schoolmaster at Drummond (the township preceeding Evanton, not laid out until c.1800) whose portion was eleven bolls one firloft three pounds of barley.<sup>1</sup>

Ian Mowat (1981. 24) cites examples of mid-eighteenth century annual rentals, such as Mains of New Tarbat valued at sixty-two bolls, while a tacksman on the same estate rented land valued at ninety-three bolls.

Even as late as 1810, when most rents were being paid in money and long leases of nineteen years were becoming established practice, Sir George Steuart Mackenzie of Coul swithered as to whether rentals in kind or in cash were the most profitable. 'Rents are now chiefly paid in money, but there are leases still subsisting which direct the rents to be paid in kind ... if prices were sufficiently variable the rent in kind might probably render the balance pretty equall during a lease (of nineteen years) for both parties' (Mackenzie 1810. 142).

## THE GIRNALS

The storehouse was therefore a necessity on the prosperous eighteenth century agricultural estate. The design requirements for these girnals was simple and functional: they had to be strong, secure, well ventilated, provide maximum storage and facilities for handling and loading. They were best sited on the coast, close beside a beach which boats could use with reasonable ease and safety, and with a level area or yard at the rear where packhorses could assemble, goods be gathered, and people work and check material. The girnals were plain rectangular buildings, similar to the large estate threshing barns such as the very fine eighteenth century barn at Balnagown, but with no need of internal flooring set high enough to accommodate the arm stretch and the flail of the threshers, nor to be orientated to take advantage of the prevailing winds to make a draught pass through opposing winnowing doors. They were sited in exposed coastal positions and were therefore subject to considerable weathering, so lime harling protected the rubble masonry which was bonded with a lime mortar (the use of valuable lime itself indicating wealth). Further finish was obtained by ashlar margins, architraves and other dressings and the well slated roofs steeply pitched to throw off water, the gable apices sometimes graced with stone ball finials. Through-ventilation was essential to keep stock aired and dry, and was furnished by slit vents or small, shuttered and barred rectangular windows, or a combination of both as at

Alness Point storehouse, usually with splayed ingoes to increase the internal light. Single end chimney stacks on some girnals indicate that the buildings were occasionally heated, probably for the comfort of a custodian, for unless the hearth were tended, there would always be risk of fire in a store housing such combustible contents.

The earlier girnals can be identified by their steeply pitched crowstepped gables with square apex finials; the later ones by flat skews, shallower rooflines and ball finials for decoration. Consistently measuring around 6.2 m (20 ft) deep, but with a varying overall length of up to 30.5 m (100 ft) or more, these girnals were sometimes larger than the neighbouring parish churches and many times finer than the homes from which the tenants came with their weighty rents — cottages that were of field rubble bonded with mud or clay mortar, and with turf and straw thatched roofs through which the smoke from the central hearth seeped its slow passage, 'houses which provided accommodation for neither man nor beast' (NSA 1840, XIV. 464). No doubt, too, a fine giral impressed the neighbouring lairds, for a good store, and even more a full store with attendant activity, was a sure indication of prosperity and success.

Some landlords combined the roles of improving agriculturalist and trader with that of lawyer or public servant in the wider sphere of national life, bringing home to their acres the latest farming treatise or technique, but requiring those acres to realize cash to finance their social and public life in Edinburgh and elsewhere. As Monica Clough has so lucidly described (1977 and this volume), George Mackenzie, Lord Tarbat and first earl of Cromartie, was a pioneer practitioner of this dual role. He had served six sovereigns by the time of his death in 1714, in various legal capacities such as Lord Justice and as Secretary for Scotland; but with official salaries up to seven years in arrears he had to find income from other sources, and from 1670 onwards developed his lands in Easter Ross — farming, the grain trade and the salmon fishings on the Conon River. At Cromarty there was a 'Girnall House for my Lord's use' (Clough 1977. 857) while at 'Portmahobuagg... ane handsome little peer was built there by George, late Erle of Cromartie' (Macfarlane *Collections* 1906. I. 215), and almost certainly the smaller of the two storehouses. Not for nothing did Lord Tarbat build his Edinburgh mansion, Royston House, conveniently near the port of Leith which would have received the produce exported from his northern estates, the house that bears the Latin inscription beginning 'Riches unemployed are of no use; but being made to circulate they are productive of much good...' (Clough 1977. 857).

### Portmahomack

In 1798 Portmahomack consisted of 'two storehouses for the reception of rents in kind and three houses' (NSA 1840. XIV. 463), together with the 'handsome little peer' which probably forms the core of the present harbour improved by Thomas Telford, 1811–16 (Hume 1977. 296). The two girnals [Fig. 9.2] form the back-drop to the harbour with their long

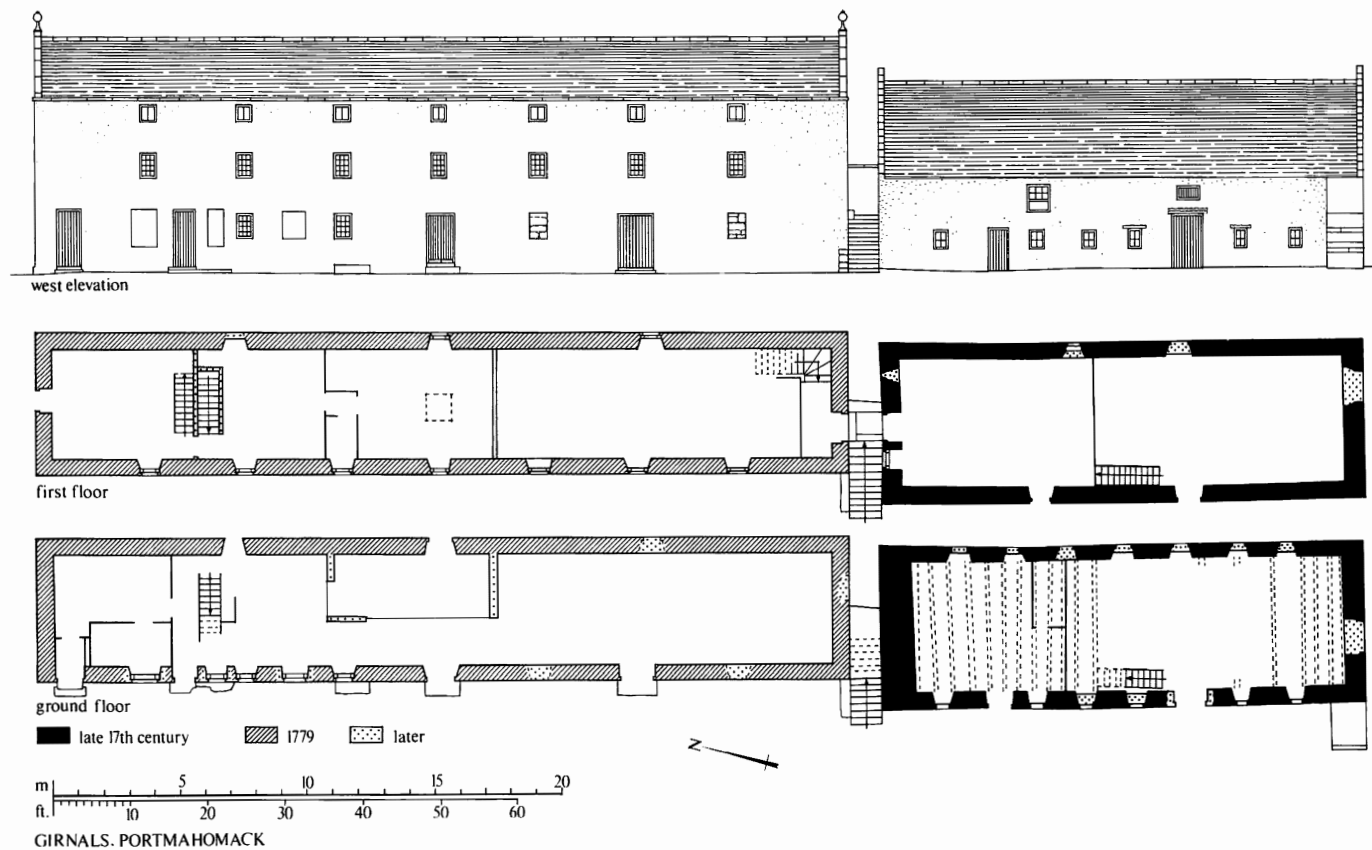


Fig. 9.2 Plans and elevation, Portmahomack storehouses, 1983.

elevations facing west to the sea and linked by a forestair at the north gable of the smaller, the older of the two, which dates from the late seventeenth century. This is a simple rectangular building with harled rubble walls on reddish boulder footings, measuring overall 19 m by 6.4 m (62 ft by 21 ft). The two doors in the long west elevation are of unequal height, their chamfered sandstone dressings having a worn rounded appearance. Six small windows light the ground floor; two loft vents survive, one enlarged. A broad buttress shores up the end of the building, close to the south gable, projecting out into the road, and a similar loading door to that in the north gable is now blocked in the south. The steeply pitched West Highland slate roof has a stone ridge, crowstepped gables with square apex terminals and cavetto skewputts.

The ground has been built up to the rear, blocking the back entrances, but a small horizontal vent, cut out of a single slab, lies off-centre under the eaves.

Internally the gairnal has a half loft at the north end reached by the north gable forestair. It retains its late seventeenth century open timber roof, which is basically of oak, is of collar rafter construction strengthened at the wallhead by stub (or sole) and ashlar pieces and tied by upper and lower collars. All joints are pinned by wooden pegs, with Roman numeral assembly marks roughly scored on the rafter faces. These 'carpenters' marks' were cut into the wood off-site, in the carpenters' yard, and indicate the order in which the timbers were to be erected [Fig. 9.3].

The later storehouse stands to the north, dated 1779 on its north-west skewputt. This is considerably larger than its neighbour, measuring 31.8 m by 5.5 m (104.75 ft by 18 ft) on plan, is of two storeys and loft and has seven wide bays, somewhat irregular in the ground floor but retaining their symmetrical fenestration in the first and second (loft) floors. The masonry is of coursed and pinned squared rubble with some harling to the gables and the seaward front, but the rear (east) is left exposed. The slate roof is of a shallower pitch than the earlier building, has a heavy stone ridge, flat skews and apex ball finials raised on slender bases. Internally it is gutted and most of the original features have disappeared, though some evidence of seating for iron bars in the ground floor windows and shuttering in those in the upper floors has been identified.

To the rear of these storehouses is a roughly walled yard, running back to the sloping hillside and the road winding down from the farmland above. Doors in the rear of the buildings (some now blocked) gave onto this area which was an integral part of the complex.

## Little Ferry

To the north, not too far across the sea from Tarbat Ness and Portmahomack as the seagull flies, is Little Ferry or Little Unes, on Loch Fleet. The Unes (or Fleet) is one of the three rivers (other two, Brora and Helmsdale) that 'have good harbours for the ships that do traffique in that country to transport from thence their Corns, Salt, Coal, Salmon, Beef,



*Fig. 9.3* Roof timbers, late seventeenth-century storehouse, Portmahomack, 1983.





Fig. 9.4 Detail, Taylor and Skinner's Survey and Maps of the Roads of North Britain, 1776, showing Little Ferry giral to far left of road on north side of channel.





*Fig. 9.5* South front, Little Ferry Giral House, 1983.

*Fig. 9.6* Rear, Little Ferry Giral House, 1983.

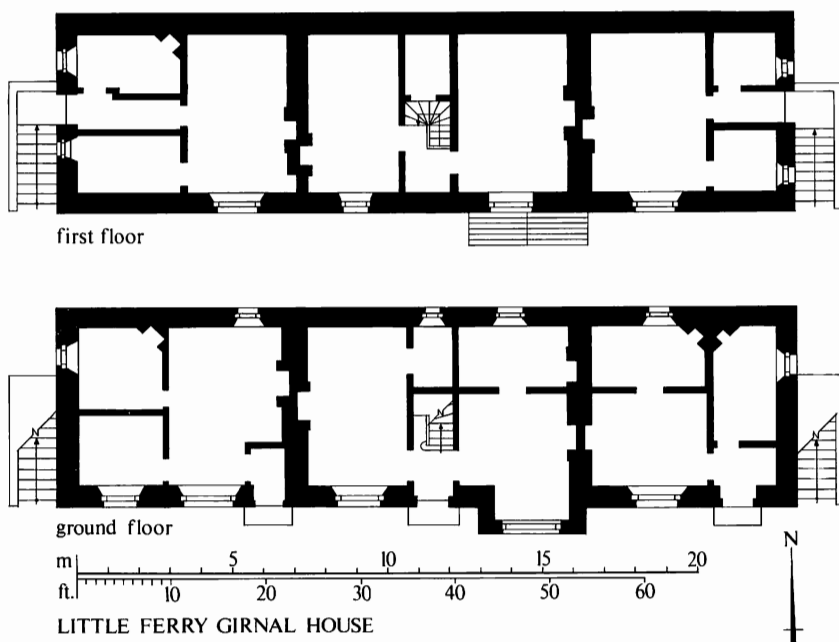


Hides, Wool, Linen, Tallow, Butter, Cheese, Plaids and other Commodities (Macfarlane *Collections* 1908. II. 100). The Sutherland coastal plain as far north as Helmsdale is sheltered by hills to landward, and the well-drained fields slope down to the shores, east and south. Thomas Pennant recorded in August 1769, that 'The Demesne (of Dunrobin) is kept in excellent order, and I saw there a very fine field of wheat, which would be ripe about the middle of next month. This is the most northern wheat which had been sown this year in North Britain'; while the Rev. Alexander Pope, who a few years later added an appendix to this travelogue, opens his description of Golspie Parish with the words 'This is fine corn country' (Pennant (1769) 1790. 190, 360).

At Little Ferry the early eighteenth century Sutherland Estate giral stands a little to the west of the present ferry pier [Fig. 9.4]. Estate factors' accounts show that it was regularly used for grain and meal shipments during the eighteenth century (Adam 1960. xxvii–xxviii). The long harled building, 24.4 m by 6.7 m (80 ft by 22 ft), with steeply pitched roof and crowstepped gables stands close to the shore, south-facing on a crescent shaped shingle beach [Figs. 9.5; 9.6]. The giral was converted by the Sutherland Estate in 1859 to five dwellings, ground and first floor flats at both ends and a single two storey dwelling in the centre, a sympathetic adaptation in Arts and Crafts Movement style reminiscent of some other Estate cottages of this period in Golspie [Fig. 9.7]. The east and west gables retain their original first floor centre entrances with simply chamfered architraves, and are served by forestairs with similarly treated ashlar parapets. The main south frontage dates entirely from 1859 in appearance, with three entrances, various asymmetrical tripartites (three-light windows) and a projecting rectangular bay window. Four gabled dormers break the roof at wallhead, the outer with inscribed stone panels, one with the date and the other with the double SS monogram of the Sutherland/Stafford family. Pronounced skewputts, painted timber facing and a diminutive swept light ring the changes in detail for the remaining dormers; all windows are multi-pane casements. Tall paired coped stacks crown the ridge and even taller shaped chimneys rise from the rear wallhead, combining to give the impression of extra height. All original stone facings are of grey ashlar, some replaced or re-tooled, while those of the 1859 conversion are in stugged red sandstone, contrasting well with the white-grey harling.

The adaptation of the Little Ferry giral was undoubtedly influenced by a similar conversion the previous year, when the English architect George Devey (1820–86) was commissioned by the Duchess of Sutherland to turn an old estate barn into four cottages. This early exponent of the Vernacular Revival created a picturesque composition from the simple rectangular building on a hillside not far from Dunrobin Castle (NLS 313/1285, 313/1291: Mr John Gifford, Buildings of Scotland Research Unit, *pers. comm.*).

The house is now a single holiday home. Inside, the original low ceiling height is retained with original joists left visible in the ground floor. The



*Fig. 9.7* Plans, Little Ferry Giral House as converted to five dwellings, 1859.

various small rooms that comprised the three ground floor dwellings are all now linked one into the other, and separate communication to each upstairs room has been achieved by the insertion of a long, narrow rear corridor. Plain tooled ashlar chimney pieces frame the fireplace, some with original cast-iron grates.

### **Ankerville Corner, Nigg and Cromarty**

Another conversion of a giral to dwellings, said to have taken place in the early 1900s, is the Old Storehouse, Ankerville Corner, in Nigg Parish [Fig. 9.8]. Measuring 24.4 m by 6.4 m (80 ft by 21 ft), only the crow-stepped gables and worn, cavetto skewputts indicate the early eighteenth century date of an otherwise totally undistinguished terrace of three, two-bay cottages, each with entrance door flanked by a window and each with paired gabletted dormers. The site of this giral is unusual within this group of storehouses, for it is the only one that is some distance from the shore, and that the tidal, muddy waters of Nigg Bay. In the mid-eighteenth century, Ankerville was the richest portion of the Inverchassley Estates belonging to David Ross, Lord Ankerville, who successfully combined the career of an agricultural innovator with that of Senator of the College of Justice, one of the group of lawyers whose lands were concentrated near Tain (Mowat. 1981. 29, 65).





Fig. 9.8 Former storehouse, Ankerville; now three cottages, 1983.

Further south in this parish, close by Nigg pier and facing Cromarty town and the narrow channel linking the Moray and the Cromarty Firths, another girnall stands close by the shore. Its present role as an hotel bar, with modern horizontal metal-framed windows, is a deceptive disguise, but the rectangular form, 21.94 m by 6.4 m (72 ft by 21 ft), the crow-stepped east gable and the long elevation facing the shore and the sea, all indicate the original use of the building, its early date confirmed by the simple chamfered door lintel inscribed 1712.

Nigg Parish was 'noted a few years ago for the abundance and beauty of its barley; now little barley is raised ... wheat is the farmer's mainstay' (NSA 1836. xiv. 34).

Opposite, on the other side of the channel, is Cromarty, until early in the nineteenth century the most important Ross-shire harbour. Fragments of the first Earl of Cromartie's 'Girnall House' (Monica Clough, *pers. comm.*; see also this volume) can be traced between the harbour and the lighthouse.

## Invergordon

Three girnalls survive, in whole or in part, on the north shores of the Cromarty Firth. Between Shore Road and Mill Street, Invergordon, steeply pitched crowstepped gables with square apex finials and the long rear wall with three unusually long centre windows (1.83 m by 46 cm: 6 ft by 1.6 ft) are incorporated in the present garage complex. Measuring 38.8 m by 6.4 m (127 ft by 21 ft) it is the longest building in the group, appears to date from early eighteenth century, and might be the 'Store-house' illustrated on a map of c.1750 of the estates of Sir John Gordon of Invergordon (RHP 37985) [Fig. 9.9]. If so, artistic licence has given the sketch an end chimney stack, of which there is no evidence in the present



Fig. 9.9 Detail from Plan of lands belonging to Sir John Gordon of Invergordon, c.1750, showing storehouse at Invergordon (RHP 37985).

building. Sir John intended, amongst other ambitious building projects, to establish a village at 'Ness of Invergordon'. Here he envisaged a settlement for fishermen and ferrymen, which developed (on paper at least) to a sizeable community with a market place, stocks, a public house and a new granary decorated with cupola, weathervane, a crane, ventilators and an enclosure. How much was completed by the energetic Sir John is doubtful, though a century later Invergordon had superseded Cromarty as the principal harbour on the Cromarty Firth (Mowat 1981: 68).

### Alness Point

Further west, standing isolated by the shore at Alness Point, gaunt against the skyline and now surrounded by flotsam and garbage, is a tall four-storey, three-bay storehouse measuring 11.8 m by 6 m (38 ft by 20 ft), with the south-east elevation to seaward and the north-east gable giving onto a tidal basin, now virtually obliterated [Fig. 9.10]. The left skewputt in the north-east gable is initialled and dated, enough surviving to decipher McK and (?)74. Captain James Munro inherited Teaninich, Alness, in 1766, married Margaret MacKenzie of Ardrross in 1768, and died in 1788, so the datestone could be reconstructed as '17 JM MMck 74' (Mackenzie 1898: 423). Though smaller on plan than other local storehouses, the



*Fig. 9.10* Alness Point  
Storehouse, 1983.



builders must have been too ambitious about its height, for constructed with walls only 61 cm (2 ft) thick, it had subsequently to be heavily buttressed, the north-east gable and the long south-east elevation having respectively two and three substantial triangular buttresses projecting 2.4 m (8 ft). These partially block two low entrances in the seaward elevation and are irregularly placed in the principal gable in order to accommodate a forestair leading to a first floor doorway. Two loading doors are in the second and third floors of the north-east gable, the upper having a stout iron hoist bar with hooked end projecting from the lintel. The seaward side has three symmetrical rectangular openings to each floor, some with their paired horizontal bars still in place; the rear elevation has three long vertical slit vents in each floor, with extra paired vents and small (blocked) window very low at ground level. The finial has disappeared from the south-west apex, though the iron seating survives; there is a long crack in the rear wall and the slated roof is badly holed.

Internally the building is gutted, but joist seatings in the walls indicate the four floors, a very low ground floor served by low seaward doors, an equally low first floor served by the entrance reached by the forestair, and two more generous upper floors with loading doors.

### **Foulis Ferry Point**

Finally, west again from Alness along the coast at Foulis Ferry Point, the finest giraln of the group stands on a spit of land projecting into the Cromarty Firth. Known as the Old Rent House [Figs. 9.11; 9.12], it is a landmark from land and sea. It appears to date from around 1740, measures 28.8 m by 6.4 m (96 ft by 21 ft) on plan, is of two storeys and attic in height, and its wide near symmetrical five-bay east elevation gives onto a curved shingle beach where boats could easily pull up. Though there have been some later alterations, including the addition of the

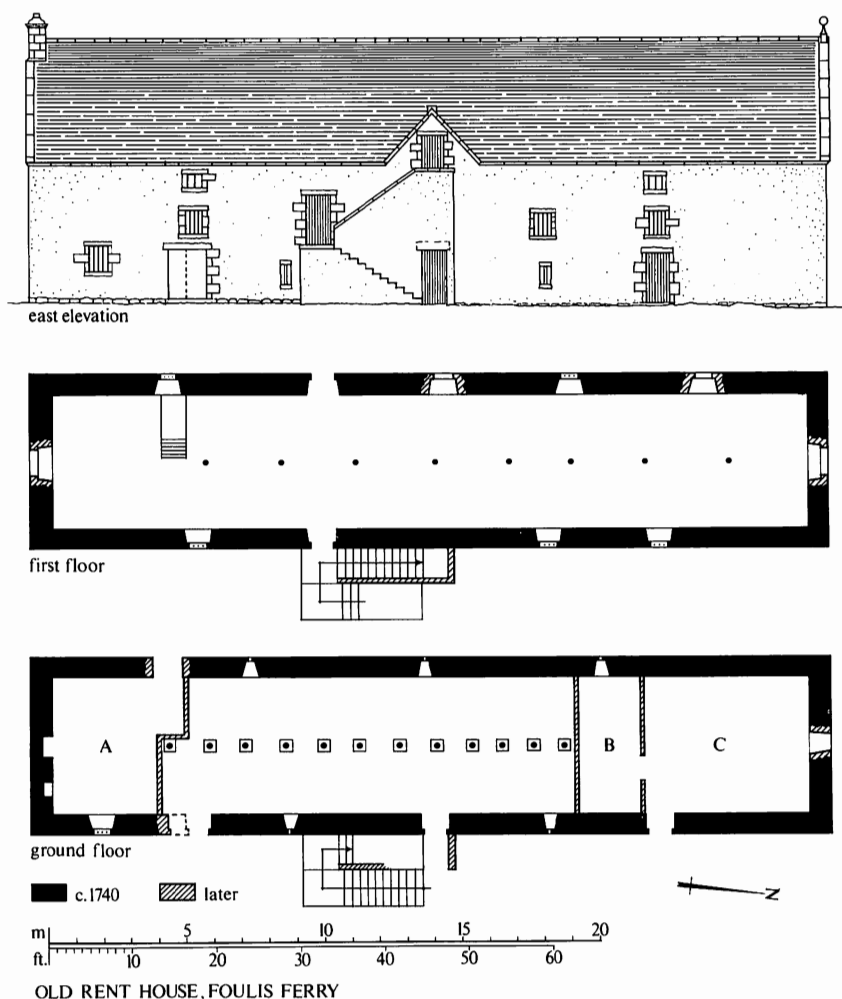


Fig. 9.11 Plans and elevation, Foulis Ferry Old Rent House, 1983.

massive forestair in the centre of the east (seaward) elevation, these are of considerable age, and do not detract from the mid-eighteenth century character of the building. There are three ground floor entrances in the seaward side, that to the south has been widened. The later forestair leads to a first floor off-centre entrance and to a centre loft door under a gablet which breaks the wallhead. Small first floor windows echo the symmetry of the east front with smaller loft windows above. To the rear [Fig. 9.13] there is a single ground floor entrance, and at off-centre a loading door in the first floor. Through draught is provided by a series of slit vents and further loft windows. Original openings have plain chamfers, the later





*Fig. 9.12* Foulis Ferry Old Rent House, 1983.



*Fig. 9.13* Rear, Foulis Ferry Old Rent House, 1983.

ones, such as the single windows in the north and south gables, have plain tooled ashlar margins. There is a simple chamfered eaves cornice, the chamfer detailing returning up the gables under the flat skews. A ball finial terminates the north gable, while at the south there is a chimney stack with nicely moulded corniced cope, the decoration of which is similar to that serving the Sutherland aisle at St Andrew's Church, Golspie, dated 1738. The West Highland slate roof was restored c.1960.

Internally there is a blocked grate in the south gable wall, and the loft floor is missing. The first floor is supported by a row of posts down the centre, which are slotted into pad stones; similar posts survive at first floor which supported the former attic flooring. Most window and vent openings have splayed ingoes, slots for former window bars, and the

*Fig. 9.14* Key, Foulis Ferry  
Old Rent House, 1983.



internal walls are neatly and smoothly finished with cherry cocking and vestiges of the plaster with which they were previously covered.

The north end of the ground floor of the granary is partitioned off as a separate room, with its own door in the outer bay of the east elevation, and with a small window in the north gable [Fig. 9.11(c)]. There is some evidence that girnals or bins were fitted around the outer edges of the room, and another small wood-lined store opens off it [Fig. 9.11(b)], closed by a door on which various early nineteenth-century graffiti record details of loadings and disbursement of grain. The window is, like some of the other openings, a later insertion, and this room was probably made after the rentals in kind had ceased, to store the meal which farm servants customarily received as part of their wages, referred to in parts of Ross-shire as 'perquisites'.

The granary key is of interest [Fig. 9.14]. It is a substantial handmade article, with a small ringed head through which passes a metal loop. This key was intended to be slung on the custodian's belt, and is worn and polished through contact with clothing.

The west (rear) elevation is now fronted by a lawn, which appears to have been the former yard or assembly area with direct access from the road to accommodate the arrivals of grain and meal.

## THE DECLINE OF THE GIRNALS

Grain exported from these coastal storehouses found a ready market during the eighteenth century in the nearby military garrison at Fort George, in Inverness and in the expanding urban centres in the south.

In general, seaborne trade flourished despite the agricultural slump that followed immediately after the end of the war Napoleonic Wars in 1815, for the area had the local advantage of the market for barley provided by distilleries. Traffic, however, mainly became centred on harbours and piers which facilitated lading and enabled boats of larger draught to load cargoes direct. Portmahomack harbour was re-built in the early nineteenth century. Invergordon developed as a port, and various piers were constructed around the coast, such as the one at Balintraid designed by Thomas Telford in 1817 (Hume 1977. 289). At Little Ferry the piers of 1808 (RHP 11/6/55), and W. Leslie's probable re-build of 1850 (NLS 313/3618), shifted the centre of maritime activity further east along the shore from the gurnal.

The farm diaries of General John Munro of Teaninich, Alness, which survive for the years 1848–50,<sup>2</sup> frequently mention sending goods and livestock to Invergordon for export to Edinburgh; they also mention the distribution of meal to farm workers and the landing of coal for the distillery on the beach to save both cartage and pier dues at neighbouring Dalmore. But of the storehouse built on that same beach by his father, Captain James Munro, in 1774, there is no word. It had outlived its usefulness.

For as long as Portmahomack harbour remained a trading centre, the girnals there served as warehouses, and after that as fishing stores. Invergordon became 'a large village-town rising very fast into importance — as fast indeed as Cromarty is going down; it being the cause' (Mowat 1981. 72). The Invergordon granary continued as a barleystore, and then as a seed store, moving into the railway age when the branch line was built between it and the sea, but when that trade declined it eventually became incorporated into a garage. At Ankerville and Little Ferry the respective estates required accommodation for their workers rather than for the fruits of those workers' labours, and both storehouses were converted into dwellings, the latter subsequently becoming a single holiday home, still called 'The Little Ferry Giral House'.

The Foulis Ferry storehouse achieved local historical notoriety when marched on by a meal mob from Dingwall, during food shortages in 1796 (Logue 1979. 43).<sup>3</sup> It continued to serve the estate as a store after rents in kind had ceased; and for many years coal was brought by sea to Ferry Point and off-loaded on the shore into carts on log pontoons. A small cart remains in the store with single central shaft and small wide wheels for use on the shingle, and it was possibly to accommodate this vehicle that the door in the east elevation was widened. The south end of the building was separated for use as a byre [Fig. 9.11(a)], with a portion of the ceiling removed and with direct access to the first floor (useful for fodder storage) by a wooden stair. The crofter-ferryman in the neighbouring cottage (now a restaurant) plied the ferry between Foulis and Findon on the other side of the Firth, paying his rent in kind until the middle of this century by collecting gravel from the shore and wheeling it around the Foulis Castle policies to surface the paths and roads, earning the nickname 'The Wheeler'. The ferry ceased to operate in the 1930s and the last ferryman died in the 1940s, leaving his daughter to be known as 'Jessie the Wheeler' (Mr Hector Munro, *pers. comm.*).

These girnals span a period of a hundred years from the late seventeenth to late eighteenth century; both ends of this building spectrum, the earliest and latest buildings of the group, being represented at Portmahomack. As trade expanded, as the cultivated land produced better grain harvests and as the estates grew in size, in productivity and in wealth, so the girnals were built longer or higher, as at Invergordon and Alness Point respectively. They survive as physical evidence of certain economic, social and agricultural patterns in eighteenth century Easter Ross and Sutherland.

## Notes

<sup>1</sup> Information by courtesy of Mr Hector Munro of Foulis from accounts relating to The Old Renthouse held at Foulis Castle. A boll is a dry measure, varying in extent according to its locality and the article measured. A boll of oats or barley weighed around 160–170 lb, and of meal around 140 lb. A firlot is a quarter of a boll. The boll was also a measure of land, computed according to the quantity of bolls it could produce.

<sup>2</sup> Typescript copy in possession of Mrs Jane Durham.

<sup>3</sup> Grain, said to be Indian corn no longer required for the American war, was distributed from Cromarty Firth ginals during the famine of 1796 (Mr W. Munro, Clashnabuiac, *Alness. pers. comm.*).

## Acknowledgement

I would like to thank the following: Mrs Jane Durham and Mr D. M. Walker for reading the draft of this paper; Mrs Durham for material loaned and comments on Easter Ross farming history; Mr Hector Munro of Foulis for time spent at Foulis Ferry Old Rent House and information about the building; Miss Helen Hoare for permission to reproduce her plans of the Little Ferry Giral House and Miss Louise Beaton for re-drawing those plans; Messrs A. J. Leith and G. P. Stell for further help with plans. Figures 9.2, 9.3, 9.11 are reproduced by kind permission of The Royal Commission on the Ancient and Historical Monuments of Scotland and Figures 9.5, 9.6, 9.8, 9.10, 9.12, 9.13, 9.14 by the Historic Buildings and Monuments Division, SDD, all being Crown Copyright. Figure 9.4 is reproduced by permission of the Trustees of the National Library of Scotland and Figure 9.9 by permission of Mr John Forsyth, Balintraid, Ross-shire. Figure 9.1 has been redrawn by Douglas Lawson.

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