KNOCKANDO
WOOLMILL TRUST

KNOCKANDO WOOLMILL

Conservation Plan

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1 Preamble

Sometimes ..... a building is important because its original contents are preserved and it is still used for its original purpose. Knockando Wool Mill in Morayshire, for instance, is full of nineteenth-century machinery for textile manufacture, all in working order and in regular use. Clearly the priority here is to conserve the building so that the mill can continue working, as well as restoring other notable features, such as the nineteenth century water wheel. [1]

The Knockando Woolmill represents a site of considerable complexity. Unlike much industrial archaeology, the site had never been dedicated purely to manufacturing. It is more typical of small scale rural industry where the proprietor may not only have lived and worked on the site with his extended family, but may have done so for generations, building upon the enterprise of those who had gone before him, passing on the inherited knowledge of traditional craft skills that would allow the manufacturing processes to survive if not, necessarily, always to prosper.

Not only did the proprietor of the woolmill live on the site and practise his occupation, but he worked the landholdings as a crofting tenure, which he leased from the local estate. In a business of this relatively small scale, and in an upland area that was geographically remote, the survival of his family and his business was dependent upon blending the commercial activities of textile production with working the land, a relationship that was founded securely upon a mutual dependency with the community the mill continues to serve. This crofting tradition did not falter until the last quarter of the twentieth century.

With the enduring image of the ramshackle appearance of the working buildings, the site bears all of the elements of subsistence activity for which capital investment for major improvements would always be difficult to justify. Relatively little of the historic fabric by which the site is recognised today was new, or near new even, when it was first installed; building materials and textile machinery were usually second hand or recycled, and, for all we know, some would have been exchanged in kind. These commodities were even recycled around the site when rebuilding or extending the mill became a necessity, as happened on several occasions in the period between 1860 and 1919, when woollen manufacturing had reached its peak.

If, on the Scottish mainland, the site is unusual for the way in which it represents a way of rural life that has all but disappeared elsewhere, as an example of a district mill in which all of the processes were carried out at the same site at one stage in its history, it is certainly unique. Here it is still possible to conjure up how bales of raw wool delivered to the door of the mill by local farmers would have been processed, and woven into cloth, blankets, or even carpeting, and this gives the mill international significance. Represented here is the logical conclusion of the mechanisation of all of the processes of the textile industry in the nineteenth century, and many of these are still recognisable from the textile machinery that has survived. The machinery, having the potential to continue in commercial use, possesses considerable rarity.

The site, and all that is encompassed by it, is extraordinarily fragile. Without careful, loving preservation, it will not survive. The conservation plan acknowledges that to do so new facilities must be introduced which will require changes to be made to the infrastructure, without destroying those qualities that give the unique historic environment of the site, and its undoubtedly picturesque setting, a distinctive cultural importance. The document sets out to provide guidance on these challenging issues.

Nothing quite prepares the visitor for the assault on all of the senses when entering the mill. Not only does the machinery have a strong visual presence, but the deafening sounds of the machinery in operation in such a confined space, the movement of the working parts and drive belts, the building vibrating with the rotational forces, and the combined smells of oil and lanolin, form an unforgettable impression on the mind once experienced. As a working site, its value is not as a museum, but as an embodiment of a living tradition which has great relevance in understanding the values of past rural life, and in the transfer of craft skills for commodities that continue to have a recognisable commercial value in today's society, just as much as they did in the past.

2 Introduction and methodology

2.1 Purpose of the conservation plan

The conservation plan for the Knockando Woolmill and its site was commissioned by the Knockando Woolmill Trust through the auspices of the Alba Conservation Trust, to assist the Knockando Woolmill Trust, and the local community, with arriving at an understanding of the significance of the buildings and of the wider site and setting. It is one of a suite of documents being prepared with the benefit of Project Planning Grants from the Heritage Lottery Fund, and should be read in conjunction with the accompanying set of conservation reports. In particular it should be read closely with the paper on the agricultural development of the site prepared by Ross Noble, from which extracts are incorporated in the sections on Statements of Significance (5) and the Conservation Policies (7). Accordingly this aspect of the significance of the site has not been covered in detail within this document.

The document has guided the Trust and the professional design team in considering how the property might be repaired, preserved, protected, changed to permit access, and interpreted.

2.2 Conservation planning

In the light of the most recent developments in the United Kingdom in the field of conservation planning – in relative terms, a new phenomenon - it might be helpful to begin by defining what a **conservation plan** should **not** be. For instance, it is not a **conservation statement,** which may take the form of an abridged conservation plan, required normally at an early stage in a project, and sufficient only to describe the significance of the heritage asset in outline form, pending further research being carried out at a later date. Nor is it, necessarily, a **conservation management plan,** which would be prepared normally for the most complex sites at a stage following the preparation of a conservation plan (or incorporating one) in which the project would be sufficiently well defined to be able to set down priorities for action, and the method by which the recommendations of a conservation plan might be implemented, in terms of programme; cost; how this would be funded; and how the project should be delivered.

It should not be construed, either, as a **heritage impact assessment**, normally commissioned once the full extent of a development proposal is known and which, in order to evaluate risk to the historic environment, requires the fundamental elements of a conservation plan to be in place in order to test the impact of any project under consideration. In view of the complexity of the project, that it involves the adaptation and repair of several structures of historic importance and the introduction of new structures affecting their setting, it is recommended, in this instance, that a heritage impact assessment should be undertaken at an appropriate time in the planning process. The assessment should be tested against the Statements of Significance and the Conservation Policies.

In arriving at a definition of a **conservation plan** James Semple Kerr's statement is, perhaps, the most succinct

> At its simplest, a conservation plan is a document which sets out what is significant about a place and, consequently, what policies are appropriate to enable that significance to be retained in its future use and development. [2]

While in the above statement it is presumed that the outcome of any conservation plan will be a project implying a measure of controlled development, this need not always be the case – occasionally, the recommendations may be for the protection of the site through an appropriate repair strategy guided by a conservation plan, and perhaps the preservation of the mill and its equipment falls most closely within this category.

As hinted in the foregoing the essential components of any conservation plan are the **Statements of Significance** (Section 5) and the **Conservation Policies** (Section 7). To be effective, both should be written in simple, unequivocal language, capable of being understood by those who may not be accustomed to highly technical terms and, in the case of the Conservation Policies, capable also of being implemented.

Having stated what is significant about the Knockando woolmill, the conservation policies are essential for guiding decisions on works of repair, adaptation and enhancement. Quoting from Semple Kerr once more [3], they should fulfil the following requirements

- Retaining or revealing significance
- Identifying feasible and compatible uses
- Meeting statutory requirements
- Working within procurable resources

The format of the conservation plan is based primarily, but not exclusively, on the model as set out in *Conservation Plans for Historic Places* published by the Heritage Lottery Fund (1998). Other source references include the following

- *The Burra Charter 1999* Australia ICOMOS
- *The Conservation Plan* James Semple Kerr, The National Trust of Australia, 1996 revision
- *The Stirling Charter* Historic Scotland 2000
- *Conservation Plans: A Guide to the Preparation of Conservation Plans* Historic Scotland Heritage Policy Unit 2000
- *Conservation management plans* Heritage Lottery Fund 2004

The terms used throughout the text of this conservation plan have the meanings ascribed to them in the above documents.

2.3 The property

The subjects of the conservation plan are diverse, focusing on the land and buildings that have been leased historically from the Knockando Estate (and, before that, the Carron Estate) by the proprietors of the woolmill. The subjects of the historic environment under consideration for the conservation plan, therefore, may be summarised as the woolmill together with its fittings and machinery, and the ancillary structures associated with the production facilities, including the drying shed and the tenter frame within the adjoining field and the WC shed; the infrastructure to power the mill including the weir, penstock, waterwheel, wheelpit and tailrace and the internal power trains; the agricultural steadings and byres, including the sawmill bench and associated structures; the cottage and the Woolmill House together with the associated garden ground; gates, boundary fences and the field enclosures; and the remains of the bridge crossing the burn.

The above subjects will be acquired by the Trust from the present proprietor of the mill, Hugh Jones, and appropriate leasing arrangements will be entered into with the estate for the continuing operation and maintenance of the site.

2.4 Methodology

The author has relied upon the earlier research carried out for the preparation of the feasibility study for the site, completed in 2001. A particular reliance has been made on the specialist reports that accompanied that document, especially in relation to the significance of the machinery and its operation. The author has benefited also from the historical research into the families associated with the site, again incorporated in the text of the earlier report.

Page from an order book showing supplies of military blankets during World War I (courtesy of Graeme Stewart)

Site inspections were carried out on 22 December 2005, and on 09 and 13 January 2006, on the last of these occasions the site inspection coincided with Ross Noble's examination of the agricultural structures, when elements of construction of the old cottage, or former bothy, were examined jointly. The structures have been recorded by way of notes and photographs. In general, the photographs appearing throughout this document will have been taken on these occasions.

The examination of site evidence has been supplemented by extensive archival research, of cartographic, pictorial and literary sources; in the case of the latter the sources are referenced throughout the text by way of endnotes. Of particular value in understanding the site have been the extensive photographic records held by Graeme Stewart and by Hugh Jones, and where historic photographs have been copied the sources are acknowledged in the text. Other valuable historic documents consulted have been the watercolours from Graeme Stewart's family collection, and old order books from the mill.

The author has, in addition, consulted historic maps at the Map Library in Edinburgh, and the records held at the National Monuments Record of the Royal Commission on the Ancient and Historical Monuments of Scotland. Other literary references are taken from the author's own collection.

2.5 Statutory listings and designations

The site of the Knockando Woolmill first entered the statutory lists in 1995, which in itself is an indication of the degree to which the property had been relatively unknown until that time. Bizarrely, perhaps, the value of the structures as a whole had not been recognised, and it had been the industrial machinery that had been listed in the first instance. From the outset the importance of the machinery and the tenter frame in the field had been acknowledged with a listing of the highest category, A, indicating national, or international importance (see below).

The site was revisited by Historic Scotland in 2003, when the deficiencies of the original listing were rectified. The site was designated as an A Group listing, which included the structures housing the machinery and the adjoining buildings. Helpfully, the listing notes made clear the agency's view that the site was a rare survival, and hence it was of international significance. The notes, and assessment, had been based very largely on the reports prepared for the 2001 feasibility study, which had incorporated the specialist reports on the machinery referred to above and an outline conservation statement. The listing notes reflect accurately, therefore, the current state of knowledge of the site at that time, and they are recorded below. It should be noted that some of the assumptions will, inevitably, need to be reviewed in the light of the research carried out for the conservation plan.

Categories of listings are determined by Historic Scotland. The following definitions are taken from the Memorandum of Guidance.

Category A
Buildings of national or international importance, either architectural or historic, or fine little-altered examples of some particular period, style or building type

Category B
Buildings or regional, or more than local importance, or major examples of some period, style or building type which may have been altered

Category C(S)
Buildings of local importance, lesser examples of any period, style or building type, as originally constructed or altered, and simple, traditional buildings, which group well with categories A and B or are part of a planned group such as an estate or an industrial complex

Group listings are defined as follows, from the same source

Buildings which relate together in townscape terms, or as planned lay-outs in urban, rural or landed estate contexts, often have their group value expressed by inclusion within A or B Groups. The group category does not alter the individual category but emphasises that the value of individual buildings is enhanced by association with others in the group. [4]

The Category A listing for the **Woolmill** has been extended to include the building, and is individually listed within the group.

Early 19th century with later additions. One of the smallest surviving vertically integrated woollen mills with fully operating 19th century textile machinery in-situ. Originally built as a small, single storey and attic rectangular-plan waulk mill. The addition of the 2-storey carding and spinning mill in the mid 19th century created an L-plan. Both random rubble with corrugated iron roofs. Further enlarged late 19th century with sizeable weather-boarded L-plan lean-to attached to re-entrant angle. Built to house further carding and spinning equipment, with large windows and corrugated iron roof. Late 19th century rectangular-plan single storey outshot (weaving shed) to NE; concrete walls with brick repairs.

Waulk Mill: windows arranged to NE and NW, loft door set within gable to NW surmounted by gable apex stack. 2-storey Carding & Spinning Mill: small single storey lean-to formerly housing milling/washing machine, 1860s cast-iron overshot waterwheel to left of SW elevation; rubble-lined wheel pit, missing timber buckets and sole boards (2003), window to right. 1st floor window to W elevation and coped gable stack, weaving shed addition at ground floor. Both with timber boarded doors, various timber sash and case windows and timber multi-paned windows with central top-hung ventilation panes.

INTERIOR: continental (continuous) carding set by Platt Bros, 1872, linked by Scotch feed in ground floor and weather-boarded lean-to, teasel gig also to ground floor. Early 19th century card, hand-fed piecing tray and bobbin winder in attic. Platt Bros condenser spinning self-acting mule to weather-boarded lean-to. Powered by line shafting. Re-entrant angle carried on timber posts.

WATERPOWER SYSTEM: weir to W of mill feeds lade from Knockando Burn (lade boggy overgrown wetland, 2003). Earthenware pipe (penstock) buried for 300 metres running E towards mill, pipe rises above ground level near mill, carried on small embankment. Embankment ceases at stone buttressed wall whereupon pipe carried across path to N of mill by simple bridge onto rubble abutment turning sharply 90° NE, terminating alongside SE wall of mill above waterwheel (pipe disused, 2003).

TENTER POSTS: located in field to W of mill, allowing drying cloth to be stretched out.

View of the woolmill from the west with the tenter frame to the left

WINTER DRYING SHED: located to S of mill, square-plan single-storey corrugated-iron shed, timber slatted louvre openings, mono-pitch corrugated iron roof. Interior; fragmentary remains of circulating pipework at floor level linked to stove, remains of timber tenter frames for drying cloth.

SHOP: located to far SE of mill adjacent to Woolmill House (see separate listing). Small square-plan single storey shop; timber boarded, pitched grey slate roof. 2-leaf timber 4-panelled door and 4-pane timber sash and case window to NE. Small window to SW at far right. Small corrugated iron lean-to at rear formerly housing carbide gas plant. Interior; timber V-groove panelling to walls with timber stock shelves running from floor to ceiling, remnants of gas piping. Water pipe, tenter posts, drying shed and shop all disused, 2003.

The list descriptions are accompanied by the following overview of the site, set out as supplementary notes

A-Group with Knockando Woolmill House, Cottage and Byre. Knockando Mill is of international significance as it is one of a few surviving small scale woollen mills in the world. The mill with its fully working machinery, array of surviving associated ancillary buildings and beautiful setting presents a rare example of a surviving woollen mill which has evolved over the centuries directly responding to the ever-changing nature of the woollen process and its mechanisation during the 18th, 19th and 20th centuries.

Separate listings cover the Woolmill House and the cottage, both of which are covered additionally by the A-Group listing. The individual listing for the **cottage** is Category B, as follows

Earlier 19th century. Simple, traditional, single storey 3-bay rectangular-plan symmetrical cottage located to S of nearby mill (see separate listing); small, roofless square plan dairy/larder attached to SE gable. Low wallheads with openings set close to eaves. Harling remaining in places, coursed random rubble with ladder pinnings evident elsewhere, pitched corrugated asbestos roof.

Central doorway to principal (NE) elevation, flanking windows to far left and far right, dairy/larder set to left gable with separate doorway. Offcentre doorway to rear (SW) elevation, flanking windows. Raised coped skews, coped gable apex stacks, clay can to SE, evidence of thackstanes. 2-leaf timber boarded doors, timber 4-pane and multi-paned sash and case windows.

INTERIOR: small hallway from front door; doorways leading off to principal gable end rooms and to central narrow room running to rear. Timber six-panelled fielded doors, small cast-iron range and cast-iron register grate to respective principal rooms. Timber lined walls.

The **Woolmill House** is listed individually Category C(S), for which the listing entry reads as follows

1896. 2-storey, 3-bay symmetrical rectangular-plan house with single storey wing and lean-to to NW. Rendered walls and stacks. Pitched slate roof to house and wing, modern roof ventilators to house.

Central doorway to principal (NE) elevation, flanking windows, wing to far right with window. Decorative bargeboards to timber gabled dormers breaking eaves in outer bays, centred rooflight to wing. Various openings to rear (SW). Coped raised skew, coped gable apex stacks with squat cans, coped gable apex stack to wing. Timber four-panelled door with letterbox fanlight, modern top-hung windows.

The **byre** is listed individually category B. An evaluation of this range of buildings has been carried out separately in the report prepared by Ross Noble, and the listing is included here for completeness. The list entry reads as follows

Late 19th century. Principal byre with later byre/store adjoining at NW gable creating long, simple, rectangular-plan arrangement, various lean-to additions. Random rubble pedestal to earlier byre, timber framed with timber cladding and pitched corrugated-iron roof to both.

2 doors with 2 windows to earlier byre to SE, central door to NE. Larger window to right with central cart door to SE elevation of byre/store. Hayloft door in each outer gable. Lean-to set to NW. Full length, continuous lean-to to NE of byre/store housing sawmill. Timber boarded doors, slatted ventilation panels to lower sections of windows, glazed upper panels. Remnants of animal stalls, mangers, troughs and concrete floor slabs with drainage channels to interior.

The site is not protected currently by natural heritage designations, although it should be noted that the Natura 2000 designation for the River Spey and its tributaries extends up the Knockando Burn, but short of the site itself. As this is a significant designation recognised by European legislation consideration any development of the site that would result in discharges into the water course would need to take into account the possible effects on the natural environment downstream.

As the site is protected by an A-Group listing which is at the highest level and, given the recent review of the statutory list entries for the structures on the site, it is considered that the current designations are robust and appropriate for its preservation and future development.

2.6 Terms used

Where textile processes are described in the text, definitions are those set out in one of the associated papers prepared with the benefit of the Project Planning Grant from the Heritage Lottery Fund *Report on Skills Conservation and Skills Development (December 2005)* as set out on pages 7 to 9 inclusive.

2.7 Orientation

The line of cottages and agricultural steadings is orientated West-North-West to East-South-East, while the woolmill is orientated properly Southwest/Northeast. Descriptions of the woolmill use the proper orientation, while, for the purposes of this report, the orientation of the ancillary buildings is simplified. Elevations facing the burn are termed as though facing North, while the rear of the cottage and the Woolmill House are termed facing South.

2.8 Author of the conservation plan

Andrew PK Wright is the sole author of the conservation plan. As noted above extracts from the paper on the ethnological and agricultural significance of the site have been incorporated into Sections 5 and 7 for ease of reference and for inclusiveness.

In recent years he has been involved in conservation planning for several complex heritage sites, preparing conservation statements, conservation plans, conservation management plans and heritage impact assessments as appropriate.

Together with Ross Noble, he acts as an independent conservation adviser to the Knockando Woolmill Trust, and prepared the initial assessment of significance of the site for the Feasibility Study, published in 2001, when a partner with LDN Architects. He has membership of several conservation bodies, which include the Scottish Industrial Heritage Society and the Scottish Vernacular Buildings Working Group.

2.9 Acknowledgements

The author acknowledges the assistance given by various individuals and organisations over the preparation of the conservation plan. A particular indebtedness is due to the trustees of the Knockando Woolmill Trust for the valuable comments on the draft, and for sharing their knowledge of the site and their interest in it. Graeme Stewart has provided constant, helpful advice, sharing his encyclopaedic knowledge of the site and how it had been managed in the past, and he has also dispensed invaluable local knowledge about the relationships the site had, through time, with the community. In addition he has made available other historic documents by way of photographs and the late nineteenth century watercolours of the site, many of which have been used to illustrate the text.

Hugh Jones has been a tower of strength, giving encouragement and assisting over the difficulties encountered all too frequently in understanding the manufacturing process, and in describing with endless patience the functions of the machinery and how it had once operated. He has also provided copies of photographs of the mill and of its machinery.

In the section on the woolmill tenants and proprietors (3.3) the author has relied heavily on the research undertaken by Hugh Jones, appearing as

Appendix 6 of the 2001 feasibility study. Evidence supplied by Graeme Stewart has also been relied upon in preparing this section.

Particular thanks are expressed to Graeme Stewart, Hugh Jones and Ross Noble for reading drafts of the text, and for forwarding valid and helpful comments to the author.

2.10 Photographic credits

All photographs appearing in this conservation plan have been taken by the author, unless credited otherwise. Original copyright of images is as shown.

3 Historical background

3.1 Handloom weaving

Before considering what may be important about the site at Knockando, it is necessary to take into account the development of handloom weaving as a rural industry in Scotland, to consider how the investment of machinery, which lay at the heart of the industrial revolution in Britain, affected the textile production at the woolmill, and how, in turn, this determined the layout of the mill buildings and the ancillary structures as the site evolved to its present form. An understanding of the linkage between the agricultural activities of the site and the production processes serves to enhance an appreciation of what survives on site today, and provides an insight into the mutual interdependency of these activities.

The export of wool and cloth had been of importance to the economy of the country in the middle ages. One of the reasons that the harbour at Berwick was in the ascendancy over Leith as Scotland's principal port, a position it maintained until as late as the sixteenth century, related to the brisk trade in wool emanating from the rich monastic establishments of the Borders. In the upland rural areas primitive breeds of sheep were commonplace. In addition to providing meat, they provided useful commodities such as wool and tallow, in which the peasants were skilled in processing the by-products of their stock. Not infrequently the wives spun the wool and dyed it, but weaving into cloth webs would have been the province of dedicated weavers in the burghs and villages [5].

Within an emerging agricultural society the first crofters were little more than cottars. Crofters would have been likely to own a small number of animals and an infield landholding, while the latter would have included among their number the country shoemakers, weavers and tailors, each perhaps with no more than a single animal and a small strip of land for cultivation. In certain Highland communities, at least up to the end of the eighteenth century, estates may have engaged an occasional weaver among other trades, who would be supported by their industry as much as by their own smallholding and animal husbandry [6].

It would be wrong, perhaps, to conclude that small scale industry in remote rural societies was conducted wholly at a self sustaining level, except possibly in the Highlands and upland areas, as noted above. By the seventeenth century the leading burghs after Edinburgh – Aberdeen, Dundee and Perth – were reliant heavily upon the manufacturing output of the rural hinterland. Aberdeen, notably, survived the collapse in the wool trade by exploiting the lucrative export of salmon and plaiding, with the latter supported by a vast network through the 'putting-out' system, which involved merchants supplying the raw material, and buying back at agreed rates. Independent weavers otherwise relied on selling webs of cloth to merchants at local markets and fairs. A letter written in 1680 by an unidentified aristocratic hand (possibly the Countess of Erroll) recorded that

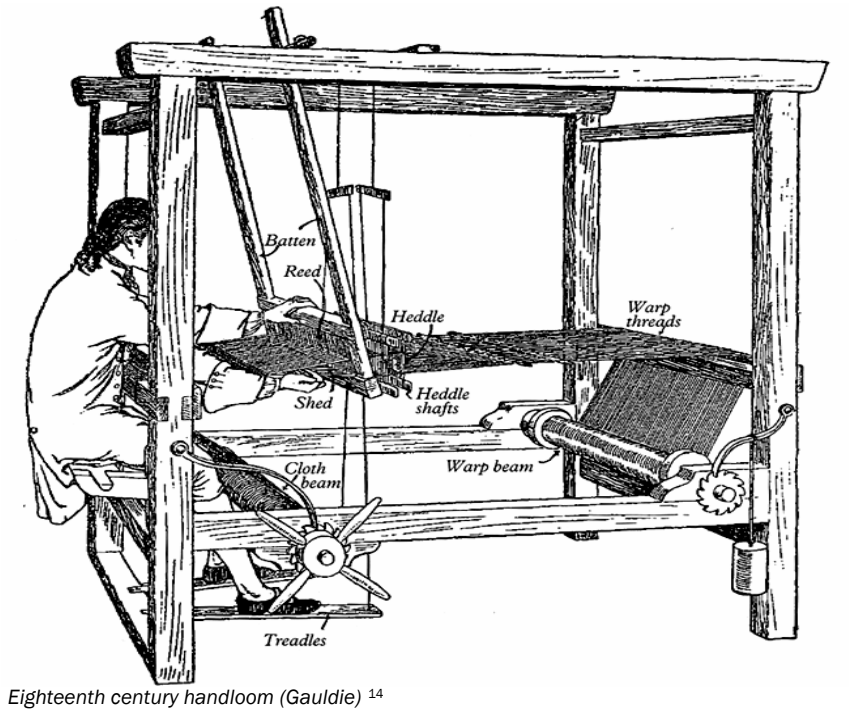
> .....the women of this country are mostly employed spinning and working of stockings and making of plaiden webs, which the Aberdeen merchants carry over the sea; and it is this which bringeth money to the commons; other ways of getting it they have not. [7]

In some of the more remote communities of the Northeast it was often observed that the women were more enterprising than the menfolk.

Having commenced in the late sixteenth century the trade proved to be highly profitable. In 1624 it was claimed, no doubt optimistically, that the industry employed around 20,000 in the hinterland of the shire [8]. It is believed that some of the merchants were engaged in sheep farming to supply the weavers with coarse wool, and that they gave encouragement to local crofters to breed sheep with a view to providing wool bales direct to the weavers. However, the quality of the raw material was substandard, due to the primitive breeds and the crofters' efforts at animal husbandry, and so, by the 1620s, wool was being imported into the area from the south, after which the numbers of sheep being farmed in the upland areas declined sharply [9]. In time the merchants were to store the imported wool in their own warehouses, where they controlled the combing of the material to improve the quality of the cloth from the spun yarn. Trade, which consisted principally of the export of stockings to London and the Low Countries, comprised also the spinning of home spun flax and the weaving of coarse plaid cloth webs [10]. The foreign markets declined from around 1680, while the woollen stockings trade was sustained only in the form of worsted stockings, continuing well into the eighteenth century when the buoyant effect of the market which continued to be centred on Aberdeen spread out beyond the county boundaries. Thomas Pennant on his first tour of Scotland in 1769 remarked

> The town of Cullen is mean; yet has about a hundred looms in it, there being a flourishing manufacture of linen and thread, of which fifty thousand pounds worth is annually made. [11]

The industrial revolution, inasmuch as it related to textile production, was relatively late in reaching Aberdeen at the turn of the nineteenth century, and until then it had been fed by a predominantly rural cottage industry [12]. Cottage industries may have thrived in the rural Northeast longer than elsewhere due to the abundance of cheap labour, and without the benefit of the additional income it is doubtful that the cottars could have supported themselves, and they would have become a welfare burden - as happened with disastrous consequences in the Highlands. It seems fair to draw the conclusion that cottage industries tended to blossom where the land was relatively infertile, or unimproved, where sufficient time and effort could be dedicated to manufacturing to supplement income in order to achieve a basic level of subsistence [13].



Eighteenth century handloom (Gauldie) [14]

The spinning of the thread would normally be done by members of a cottar's immediate family, and would have been taken to a weaver to be woven into webs [15]. The weavers demanded yarn only of the highest quality, and for this the raw material had to be prepared thoroughly prior to spinning. For this reason they preferred the womenfolk of their own families – including the youngest of the girls – to be engaged in the preparation of the yarn directly under their own control [16]. In the more remote areas the division of activity within any community was not quite so well defined, and a cottar might alternate between cultivation of the land and earning income by a manufacturing activity such as shoemaking, or weaving, from which any surplus beyond the needs of the family, or the immediate community, might be sold on to merchants, or at local fairs [17].

The entry by George Gordon for the Knockando Parish in the New Statistical Account, penned in August 1835, suggested that the local economy of the parish reflected the regional patterns with some accuracy. He noted that weaving and spinning had been commonplace, but that the activity had declined in recent times [18]. He was meticulous in recording detail in his commentary on each subject, and in the section on 'Industry' he recorded the following commodities

> Home-made stockings sell from 6d. to 1s. 6d., according to size; plaiding 1s. per ell; shirting per yard from 1s. and upwards, according to quality; wool and lint, 1s. per lb.; wool per stone of 28 lbs. bale 1s.; yarn, 10d. to 1s. per lb.; sacking, 1s. per do; weaving of plaiding, costs 2d. per ell; weaving of shirting or sheeting, 4d. per ell; spinning, 7d. to 9d. per spindle. [19]

The account is particularly illuminating in highlighting the diversity of the textile production in the parish, suggesting that much of this was for consumption within the community itself, and the degree to which this remained a cottage industry in a typical upland parish.

By the eighteenth century there was every reason for landowners to encourage a viable rural market economy, and the efforts of the leading agricultural improver of the area, Sir Archibald Grant of Monymusk, in setting up the weaving initiative at his planned village of Archiestown, next door to Knockando, in 1761 [20] must be seen in this context. A deciding factor was the perennially low standard of inherited agrarian practice. Improving the tillage of the land and animal husbandry arrived relatively late when compared with elsewhere, as the entries in the Old Statistical Account for the parishes throughout the upland areas the Northeast testify only too readily. Indeed, in the mid-eighteenth century the area around Knockando was particularly susceptible to the widespread reform of land tenure made possible through landowners exerting their legal rights in order to improve their land. This has been referred to as a little-known subject of 'Lowland Clearances' [21], in which the traditional values of patriarchal clan leadership came to be challenged following the Abolition of Heritable Jurisdictions Act of 1747 immediately after the '45 Rising. The local lairds sought validation of their legal rights to enforce land clearance, a move that began in earnest in the 1760s and spread, in time, to the Laigh of Moray. What lay behind their petitions to move forward with clearing the land was the conversion the traditional currency of land returns and rentals made in kind into payments in money, thereby increasing the wealth of the estates directly from agricultural improvement. The landscape was reshaped with new field boundaries and enclosures laid out to the plans of land surveyors (a profession that had emerged out of the need for precision in planning for military campaigns over difficult terrain, and the recording of the forfeited estates after Culloden). As the century progressed the title of 'farmer', or more precisely, 'tenant farmer', was used increasingly.

The net effect of this policy is recorded in the short entry in the Old Statistical Account of Francis Grant, minister of Knockando (then

Concern about the lack of industrial output, and of rural depopulation, was by no means confined to the upland parishes of Moray in the late eighteenth century. The minister of the parish of Dyke and Moy, nestling in among fertile land on the edge of the firth, noted that, among the causes for depopulation were the enlargement of farms following 1745, and a perceived need for fostering local industry and handicrafts. Edinburgh, Glasgow, Paisley and London were listed as the main destinations for employment and higher, and once gone they never returned. He wrote: *The introduction and patronage of manufactures would not only prevent further depopulation, but would give new life and spirit to agriculture, bring an increase in people, by promoting and providing for marriage, and form a solid and satisfactory basis for increasing rents. If manufactures were first established, rents would quickly rise of course, and the enlargement of farms would occasion no distress. But it is as short-sighted policy, that aims at an increase in rent, by a decrease in people, whose labours can at once be made profitable to landlords, and comfortable to themselves. A more timely attention to fisheries and manufactures, and particularly the manufacturing of wool, in the Highlands of Scotland, might have prevented the emigrations to America, and even increased the sources of public prosperity and wealth.* [22]

'Knockandow') Parish, when he observed in the 1790s 'the population is rather less than about 25 years ago, many having gone to Aberdeen' [23]. He went on to observe the following, which may suggest that the impact of the land reforms had not been quite as far reaching as the source papers seem to suggest, and that the local economy was still surviving only at, or just above, a subsistence level.

In 1782 there was neither a sufficiency of feed nor bread, and had the Government not interfered, numbers must have starved; but the supply granted, relieved, in a great degree, their wants. – The parish, in general, is uninclosed. The people are sensible of the advantage of inclosures, but they are little encouraged, except by one of the heritors. The condition of the people might be much meliorated, by granting them leases for 38 years, and a lifetime, by encouraging inclosures, and giving them examples of good husbandry. [24]

The account confirms the extent to which a common labourer could not support his family without having croft land, and that his wages would be roughly half of those of a mason, or wright; in winter the opportunity for labouring work would fall, and his daily rate decrease accordingly. In this the parish reflected national trends. An unskilled labourer's wage would be around half that of an artisan [25].

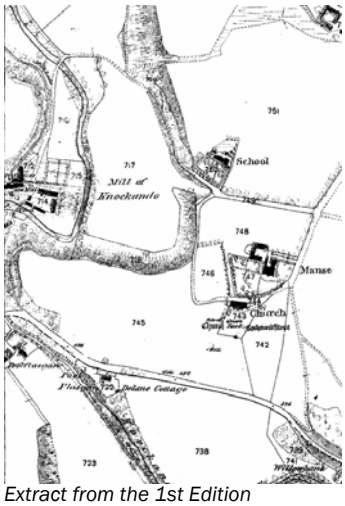
Whatever the intentions of the landowners, the effect of the changes they were seeking to make took many years before delivering the anticipated benefits. By the mid-1830s, among the poorer tenants the dues to the proprietor were still settled by consumables, which included the provision of limestone, and by providing horses and carts upon demand. However, the traditional systems of land tenure appeared to be breaking down and many of the proprietors had converted the provision of services into payments for land rents in cash [26].

Even with the rapid changes that followed the introduction of powered machinery for textile production, the pace of change in the early nineteenth century was relatively slow but, nationwide, textile production vastly out-performed all other manufacturing processes. In 1826 Sir John Sinclair calculated that, compared with 19,000 engaged in other manufacturing industries in Scotland, no less than 250,000 were involved in textile production. Of this figure he further estimated that only one-tenth of this number was associated with weaving, compared with no less than 154,000 involved in the cotton industry, and 76,000 engaged in the production of linen and hemp [27]. The statistical ascendancy of textile production over other manufacturing in Scotland was to continue in fact until as late as 1891 when, for the first time, it was overtaken by the numbers of those employed in heavy industry [28]. Textile production came increasingly to be focused on the factories, where the labour force would be mainly female, but until the 1830s the weavers were a skilled, affluent group of artisans for which the majority still used handlooms within their own homes and, given the entrenched resistance to the mechanisation of the industry, earnings were to fall rapidly. At the start of the 1820s, there were still only 2,000 power looms in Scotland, and yet, by the end of the decade, the number had risen to an estimated 10,000. Significantly, other than for carding wool, few of the industrialised processes suited the woollen industry as yet, and none of the power looms were used for this branch of the industry, the vast majority being for cotton, and a few for linen. By way of comparison there might still have been around 50,000 handlooms in operation at the end of the decade [29]. Due to the unstoppable growth of the urban textile factories in the rapidly expanding towns and cities, numbers of handloom weavers were decimated during the 1840s. Whereas there might have been 84,000 of them at the beginning of the decade, by the end of it there were only an estimated 25,000. The decline was unstoppable, and it was only in places like Harris and Lewis that the skills of handloom weaving were maintained. Enid Gauldie has summed up the position in the following

Some branches of the trade survived. Those who were specialists, who made very fine high quality goods for an individual customer, those who could do something still too difficult to be achieved on a machine or which had a limited but prosperous clientele, these found a niche in the industrializing society and survived within it. And those who lived at a very great distance from the cities and could work for a restricted community found a way to make a living. [31]

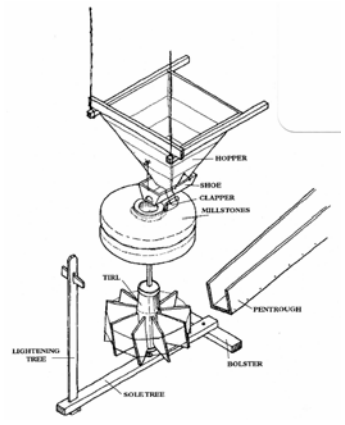
In these words we can begin to find an explanation for the survival of the Knockando Woolmill, as much as we can for those small district mills of the woollen industry in the more remote counties of West Wales in the decades following World War II.

3.2 The mechanisation of the weaving process



Extract from the 1st Edition Ordnance Survey map surveyed 1871 showing the meal mill and sawmill at Mill Howe © National Library of Scotland

While in most areas weaving remained a domestic activity conducted in the home or in an adjoining workshop, by the mid-nineteenth century the conversion to power looms and systems operated by either water, or steam power, became the norm for all premises but the smallest ones. Improvements in power systems reflected an increasing reliance on waterwheels which filtered down to the rural areas where the technology was harnessed for meal mills, lint mills, sawmills, snuff mills, paper mills and, in the northeast, bucket mills of which there is a single survivor in Aberdeenshire at Finzean. In the rural textile industry water systems powered fulling mills (in Scotland, 'waulk mills'), carding mills and, later, woolmills where some, if not all, of the processes might be integrated. We know that on the Knockando Burn there had been a carding mill and a meal mill upstream of the present woolmill site at Mill Howe, both of which were destroyed in the floods of 1829 [32]. By the time that the text for the entry for the Knockando parish (which included the new planned settlement at Archiestown) was penned for the New Statistical Account, the number of mills in the parish remained at one waulk mill and a carding mill, but the number of meal mills had increased from one to four [33]. As shown on the 1st Edition Ordnance Survey map the meal mill upstream of the woolmill site, at Mill Howe, had been fitted up for sawmilling.

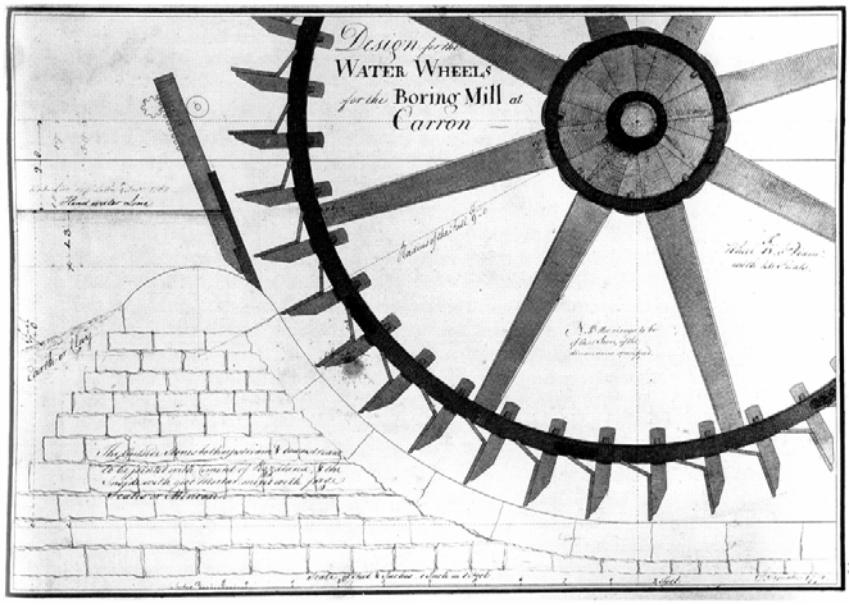


Workings of a Norse mill of the Western Isles and Shetland (Watts) [30]

Water power for small rural mills has enjoyed a long tradition in Scotland, and until the rise of organised industry - from the late sixteenth century onwards - the purpose of these early structures was exclusively for milling grain. Mills were small and primitive, often several in number along the length of a single watercourse, but they were important enough to figure often in the late sixteenth century maps of Timothy Pont. In the remote rural areas associated with the early Norse settlers in the coastal zones of the Northwest mainland, Northern Isles and Hebrides mills were fitted with horizontal wheels with paddle blades to which water would be fed by short stone-lined lades, and for which the generic name of 'Norse mills' is given [34]. It is likely that mills with vertical wheels were introduced into Scotland from the south through Anglo-Saxon or Norman occupiers in those parts of the country where the breadth and flow of water was unsuited for powering horizontal mills, and would have been commonplace for grain milling. From as early as the fourteenth century it seems that the technology, through the introduction of gearing, had been adapted for cloth fulling – a laborious process compared with the other processes of textile production which, for centuries, were capable of being undertaken by hand [35].

During the eighteenth century there was a growing awareness of the need to harness water power more effectively as the scale of mechanised operations increased. As the name of their trade suggests, millwrights were engaged initially in building waterwheels of timber, and there were constant problems of water penetrating the mortices at the joints between the naves and the shaft with the result that the latter would perish, and

require to be replaced at regular intervals. Millwrights were respected members of the community, and were often innovators as well as being craftsmen whose skills were essential to sustaining the rural economy. In the period from the sixteenth to the end of the eighteenth century Scottish waterwheels were normally of the undershot, or breastshot type, fitted with 'starts' and 'awes', requiring significantly less infrastructure to be in place – for instance, elevated mill dams and lades – compared with overshot wheels which tended to be less common. Vertical wheels offered advantages of being able to control the power needed to drive the machinery of the mill, through adjusting the rate of flow, and by varying the diameter of the wheel and its width. Overshot wheels fitted with buckets were considerably more efficient, requiring less water to begin turning the wheel, and from the self-weight of the wheel itself once rotating.



Drawing by John Smeaton of a waterwheel for the ironworks at Carron (1770)

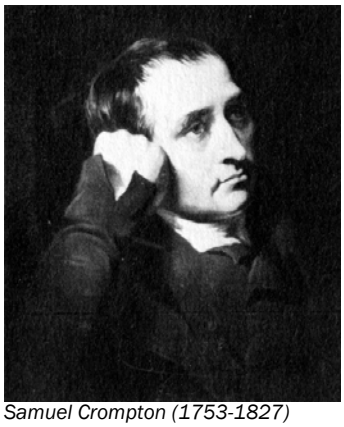
Detail of the waterwheel installed at Knockando

From the practical experimentation of engineers such as John Smeaton, who had in 1770 prepared a design for the Carron Ironworks [36], the hydraulics of wheel performance was examined and hybrid wheels of cast iron and wood emerged. It was not until the very end of the eighteenth century that the first of the iron wheels were cast in the foundries in England. By the 1820s they were readily available across Scotland, and capable of being transported in sections to rural sites where the road systems were sufficiently developed. The two entries for the Statistical Accounts for the Knockando Parish both make observations on the state of the roads, over which some progress had been made by the second of the entries in the mid-1830s, although the minister noted 'Until lately the parish roads were most miserable', adding that the minor roads remained in poor repair, leaving many properties inaccessible [37]. In Scotland, the mechanisation of the woollen industry in the eighteenth century remained focused on waulk mills. With the encouragement of the Board of Trustees for Improving Fisheries and Manufactures, set up in 1727, contemporary developments were studied in England. Landowners often collaborated with one another over setting up joint ventures to stimulate the growth of the weaving industry in the towns, and in this they foreshadowed the development of the fully integrated mills which emerged after 1785. A waulk mill was established by Sir Ludovick Grant of Grant at Craggan in 1750, just outside his newly established planned settlement at Grantown-on-Spey [38]. These ventures mirrored the general spirit of the age of 'improvement', and cannot be separated from parallel initiatives being undertaken in the areas of agricultural improvement and, in particular, the introduction of new breeds of sheep such as Cheviot and Blackface into the

upland areas [39]. As the century progressed development of the woollen industry was not a priority of the Board of Trustees, whose interest was focused firmly on the development of the production of linen textiles. Consequently financial support was given only occasionally, and then, reluctantly.

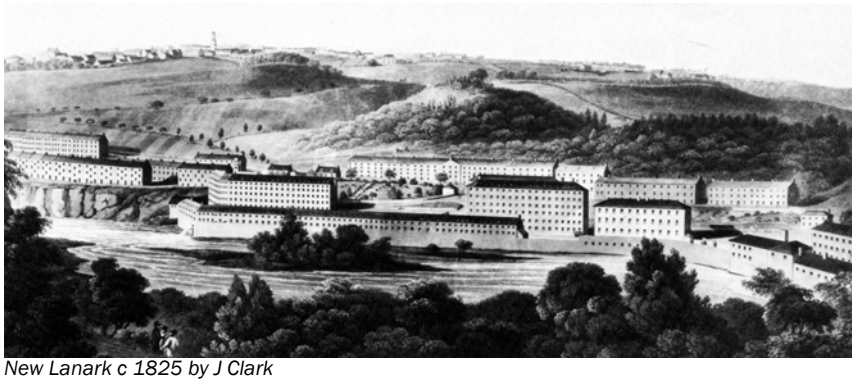
Setting aside the investment in waulk milling, the earliest mechanisation in textile production was concentrated on the cotton industry, with the principal innovations responding to the increasing scale of the factories in the English dales where water power was freely available, and capable of being harnessed. Most of the processes were unsuited to the woollen industry, which remained more along the lines of an organised cottage industry, and not purely for the reasons that investment had not been offered by the Board of Trustees.

Richard Arkwright (1732-92) by Joseph Wright of Darby



Samuel Crompton (1753-1827)

Among the earliest of the inventions was John Kay's fly shuttle system of 1733, which permitted one weaver instead of two to produce broadloom cloth in excess of one yard in width. The first rotary carding engines were patented independently by Lewis Paul and Daniel Bourne in 1748, and were favoured in the woollen industry for long after continuous carding had been introduced in the mid-1770s. In some cases carding was incorporated within existing waulk mills, and where this occurred they acquired the name of scribbling mills. In turn they led to the development of the vertical woollen mill of the type at Knockando, where all of the processes were integrated within the same structure [40]. Further milestones in the breakthrough in production came in the 1760s with James Hargreaves's first successful multi-spindle machine, the 'spinning jenny', and although developed primarily for the cotton industry it proved well suited to the needs of the woollen industry, and hence bolstered a faltering domestic industry well into the nineteenth century [41]. The most significant development to have a lasting effect on the cotton industry in northern England, and in Scotland, resulted from Richard Arkwright's water frame which he patented in 1769, which was geared to a new method of textile production in factory premises, upon which he continued to improve the patents throughout the 1770s. He set up the water-powered mill at Cromdale in Derbyshire in 1771 and, thereafter, his patents were produced under carefully controlled franchise which, for some, was seen as having a restrictive effect on a fast expanding industry. Samuel Crompton developed his spinning mule, which he never patented, and this spawned a series of improved versions by other manufacturers. The relentless tide of improvement was such that, with the considerable advances made in spinning technology, pressure would mount inevitably to mechanise the weaving process itself as the production of cheap, high quality yarn was now such that the weavers simply could not produce the cloth fast enough [42].

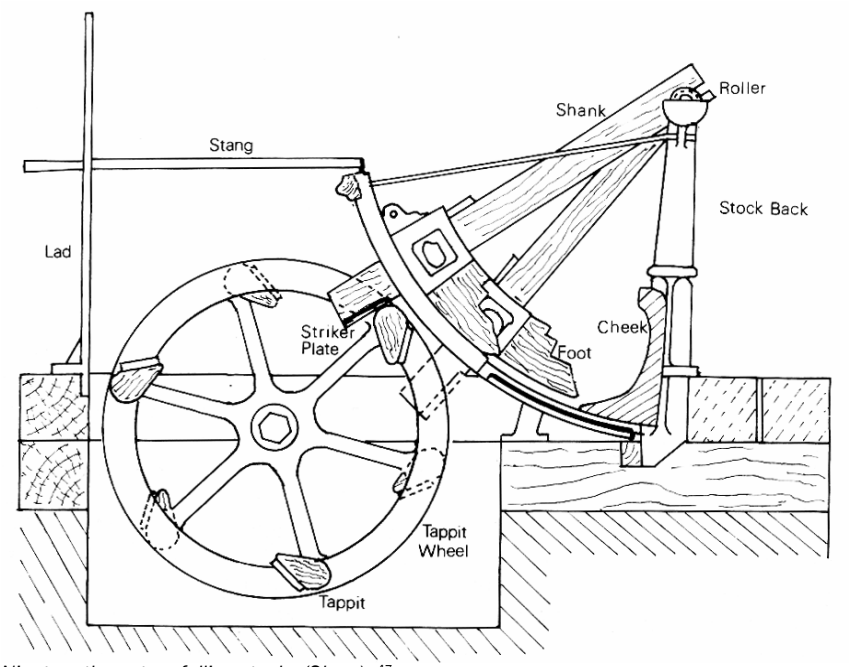


New Lanark c 1825 by J Clark

In Scotland the first water-powered cotton mill devised on the factory system had appeared by 1778 at Penicuik; other model factories soon

appeared elsewhere. The stage was set now for large scale initiatives, the most notable of them being the massive complex of mills set up at New Lanark in 1785, which followed upon a visit by Richard Arkwright to Glasgow to meet David Dale, a prominent Glasgow yarn importer. The factory was run by Dale's son-in-law, Robert Owen. It is recorded that by 1814, there were 120 cotton mills in Scotland, and that the greatest concentration of them was in Lanarkshire and Renfrewshire, where steam-power had been introduced to overcome the restriction of the limited number of sites where water supplies were not only available, but reliable [43].

The first power loom was developed in 1785 by the Reverend Edmund Cartwright. He persisted over many years with further patents and improvements, but the complexity of the machines was such that they were difficult to operate and they were unreliable, and yet they foreshadowed many of the features of the later machines to enter commercial production. It was not until 1822 that the harnessing of the appropriate technology – the use of cast iron for frames and gearing – saw the emergence of a power loom capable of mass production under the guidance of Richard Roberts [44]. However, the adoption of the new technology was fraught with difficulties, and it was not until the early 1840s that power loom weaving for the cotton industry was considered to be profitable [45]. At the height of the industrial revolution textile machine manufacturers were expanding rapidly. The year of 1846 saw Dobson and Barlow leave their premises for a new site in Bolton to expand their operations, while the growth of the firm of Platt Brothers was unprecedented. In 1854, and for many years thereafter, it was the largest engineering business in the world: from humble beginnings as a village blacksmith in Dobcross in Yorkshire Henry Platt had supplied jennies and card cylinders to local wool manufacturers, and by the 1770s output had extended to a flourishing family business, which moved across the county boundary in 1821 to Oldham [46].



Nineteenth century fulling stocks (Shaw) [47]

Although the focus on mechanisation of the woollen industry had been on fulling and spinning, other processes would be addressed in time, and capable of being operated by water power. The following notes are based largely on John Shaw's summary in his comprehensive analysis of the industry in *Water Power In Scotland 1550-1870* [48].

Teazing machines were likely to have been developed and used in Scotland by the 1780s, and a teaser, or 'willy' had been installed by this time at the Tarred Wool Company's Haddington mill. Mills across most of the counties of Scotland had adopted the machinery by 1810. The first **scribbling** and **carding** machinery appeared in Galashiels in the 1790s with equipment delivered from England, and by the end of the decade it was recorded that carding machines were in operation as far afield as Nairn and Ross-shire. Once again, by the early nineteenth century, the machinery was in widespread use across Scotland. Hargreaves's **spinning jenny** had been in use in Edinburgh woolmills by the 1770s, adapted from the cotton industry. The machines were hand-operated initially, and it seems unlikely that they were driven by water power until after 1830.

As noted above, **power looms** were slow to be adopted at first by the cotton industry, and it appears that the woollen industry did not embrace the machinery generally until the middle of the nineteenth century. Although there is evidence that cloth had been raised by teazel gigs in Scotland as early as 1690, it appears that **raising** machines did not appear in any numbers until the mid-nineteenth century. Shaw notes that many of the innovations for the woollen industry were led by the millowners and millwrights of the Borders, and in particular Galashiels, reflected in the number of applications made to the Board of Trustees. However, by the end of the eighteenth century the Board was beginning to relax the presumption against supporting woollen manufacturing, and it continued to offer some limited financial aid and encouragement until the 1830s [49].

It would be wrong, however, to assume that the adaptation of the factory system for the woollen industry was restricted to the South of Scotland. The industry in Moray was well established by the end of the eighteenth century. The firm of G & G Kynoch of Keith was established in 1788, and had relocated to its permanent site by 1805, at Isla Bank Mills. Johnstons of Elgin grew out of a general merchandise business that included the sale of English cloths and flannels, and by the first decade of the nineteenth century its founder, Alexander Johnstone, had set up a manufacturing site that covered most of the main processes, and undertook the additional carding of wool for individual customers throughout Moray [50]. By the middle of the nineteenth century the company was already working with imported wools [51]. The other principal manufacturers in Moray were founded later – Robert Laidlaw and Sons, with whom the mill family at Knockando were particularly associated, set up the Seafield Mills, also in Keith, in 1901. Apart from those landowners who invested in setting up mills (as noted previously, a legacy of the wider improving movement associated with the introduction of new breeds of sheep, with higher wool yields) the promoters of the new woolmills were generally established merchants. In view of the capital involved in setting up new manufacturing sites, initiatives by artisans working at a purely domestic scale would not become commonplace until the middle of the nineteenth century. When this occurred, expansion of the business was often associated with the development of the primary area of expertise to include other specialisms – for instance, carding, waulking, or weaving. Such had been the case evidently at Knockando, even if the role of the landowner (until the mid-twentieth century, the Carron Estate) in encouraging, and financing the development of the site is not altogether clear, and here the initiative may have followed the acquisition of the woolmill enterprise by a new proprietor.

In spite of the domination of the industry by cotton textile production, there is evidence that this was on the wane in the more remote areas where the woollen mills were beginning to prosper After the middle of the nineteenth century the use of power looms in rural mills took off dramatically. Shaw notes from Factory Returns that at the mid-century less than ten per cent of all woollen mills (estimated, then, at 182 in total) were fitted with power

Distribution of water-powered woollen mills c 1845-80 (Shaw) [52]

looms, and by 1871 (corresponding to the year when the waulk mill appeared on the First Edition Ordnance Survey map) the total number of mills had risen to 218, of which roughly 65% used power looms. Interestingly the statistics show that only 43 of the total number of mills were by this time dedicated to weaving alone [53]. The above map shows that the distribution of woollen mills was widespread across the whole of Scotland in the period between the mid-1840s and 1880. An increased reliance on powered machinery required the technology of the power train systems to be developed correspondingly, and this continued to be refined throughout the nineteenth century. When, in the twentieth century, it was deemed no longer economic to continue with water power, maintain the associated infrastructure of dams, lades, wheels and their gearing, wheelpits and tailraces, it was normally a straightforward matter to place an electric motor at the end of the principal line shaft [54]. This change was made at Knockando in 1949, after which the water power system would have fallen into disuse.

3.3 Woolmill tenants and proprietors

Our knowledge of the previous mills at Knockando is shaped very largely by the narrative prepared for the Old and New Statistical Accounts, and the description of the damage caused by the Great Flood of 1829, recorded vividly by Sir Thomas Dick Lauder – a classic description of human misery and suffering in the face of a natural disaster of unprecedented proportions. Dick Lauder's account places the carding mill firmly at Mill Howe, the haugh of land set within valley sides above the burn gorge, upstream of the site of the present woolmill. On the basis that the entries in the Statistical Accounts refer to the fact that there had been a waulk mill

(without giving its precise location), this suggests that the site of the present mill conforms with the description given for its former function. Dick Lauder's account of the damage caused after the flood is recorded here in full for the fact that it appears that more than just carding was undertaken at the upper mill.

After the flood the prospect here was melancholy. The burn that formerly wound through the beautiful haugh, above the promontory, had cut a channel as broad as that of the Spey from one end of it to the other. The whole wood was gone; the carding mill had disappeared, the miller's house was in ruins, and the banks below were strewed with pales, gates, bridges, rafts, engines, wool, yarn, and half-woven webs, all utterly destroyed.....The parish of Knockando returned twelve cases of families rendered destitute by this calamity. [55]

On the basis that the waulk mill does not merit a mention in the disaster count, this appears to indicate that it had been located on slightly higher ground (where the old cottage is now), and that it had survived without substantial flood damage. It seems probable that the gorge would have caused the floodwater to back up across the haugh, at the point where the rate of flow would have been heavily restricted, and which would have regulated the flow at the lower lengths of the burn. The scene of devastation that the author chose to illustrate suggests that something like this must have happened, in fact, not unlike the occurrence from the same event at Randolph's Leap at the confluence of the Findhorn and the Divie.

The account suggests that the mill had been mechanised in some form, and the existence of a carding mill and a meal mill at Mill Howe accords well with the 1st Edition Ordnance Survey map, although the carding mill seems to have disappeared. The corn mill had been extended between 1829 and 1835 to incorporate a sawmill, most probably when the mill was rebuilt after the flood, according to the entry in the New Statistical Account [56].

At the waulk and carding-mills, wool is dyed and manufactured into plaiding and broad-cloth, blankets and carpets. Four hands are employed, but not constantly.

Because the parish includes Archiestown there can be no certainty that the carding mill was ever rebuilt – there was only one carding mill recorded for the whole parish, and two wool carders. It is noted that there were also thirteen weavers and a single dyer in the parish and, from the above account, it can be deduced that the wool dyer was located at the waulk mill and that there was a fair amount of variety in the produce of both of the textile mills in the parish at this time.

The same 1st Edition map (page 27) shows the present site and its structures described as the 'Wauk Mill'. If, from the foregoing, it is concluded that the waulk mill referred to is on the present site of the woolmill, as seems most likely, then we know that the tenants of the mill in 1784 were William and Ann Grant, to whom a son, also William, was born in that year [57]. The family lineage, established from parish and census records, and the associations of the offspring of the first-named members of the family with the present site, confirm the continuity of textile production on the site. In the absence of information to the contrary, it is fair to assume that the tenancy held by the Grants had not been transferred from elsewhere in the locality. The next section (4.1) addresses the link between the structures on the site and its early history.

From the same records we know that in 1823 a younger son, Charles, was at the head of the mill family, and that in 1841 he and Janet Grant were recorded at the site, with Charles's occupation listed as a wool dyer [58]. Two labourers were recorded at the same address, which suggests that the mill was already well into commercial production. It is reasonable to assume that they would have been involved in either carding or fulling operations on the same site. In 1851, (the head of the family must have died by then as he is no longer named on the census records), Jean Grant was

continuing with 'knitting and spinning'. By this time the separate household headed by the weaver, Simon Fraser, is listed, and his son, John, was following the same occupation. Hugh Jones has concluded that when Fraser, already established in the locality as a weaver, moved to the woolmill, he may have introduced weaving skills to it [59]. It is probable that he had stepped into the void left after Charles Grant's death, and the financial incentives offered by the undertaking could only have made the move worthwhile.

In the early 1860s a new chapter in the history of the mill began, and almost certainly this led to the expansion of the mill buildings and the progressive mechanisation of the various processes carried out on the site. The firm of A Smith & Son was founded, under which name the firm traded for more than a century. Alexander Smith had moved in around 1863-4 to Knockando from Premnay in Aberdeenshire, where he was born in 1837; presumably Janet Grant had sold out her interest to him after Fraser retired from the undertaking, probably due to ill-health. Both former proprietors remained in the area, and while it had been thought that Janet Grant had occupied Willowbank, the cottage across the burn overlooking the mill site [60], this may not have been so. A family relative, JM Grant, painted the watercolours of the site presumably during summertime visits, which indicate that the family continued to have an interest in its development, and setting, which was recorded lovingly in these delightful images.

Alexander Smith's son, James, continued with the family business after the death of his father in 1907. A photograph dated 1910 (page 43) shows James Smith and his wife, Emma, in the company of Smith's mother and sister, who were understood to be the last inhabitants of the old cottage (his mother died in 1915). James and Emma Smith had an adopted daughter who died from tuberculosis at the age of sixteen, for whom they had built the summer house on the banks of the burn at the foot of the garden in front of the Mill House [61].

In 1919, the next chapter in the history of the mill commenced when Duncan (born Robert) Stewart, Emma Smith's nephew, came to work at the mill as an employee after demobilisation at the end of World War I. He had been injured in the conflict. He married the great granddaughter of the weaver Simon Fraser, Winnie, and was assumed into partnership with James Smith's widow, Emma, when Smith died in 1937. Emma Smith continued to occupy the Mill House, where she lived until she passed away in 1971, a centenarian. Latterly Winnie ran the mill shop, which was known as the office, and carried out finishing work there. It is proper that any discussion of those involved with the running of the mill should take into account consideration of those who worked there, and who would have been employees from within the local community. In the wonderfully evocative photograph of the millhands standing in front of the mill, assumed to have been taken around 1915 (see overpage), while few of the names have been established, the figure on the right will be Harry Thomson, who was second in charge of the woolmill operations on the site, and appears in a number of photographs up until the 1950s. At one stage Elsie Smith had been listed as a weaver at the mill, and it would be fair to conclude from their facial similarities that the boy and girl on the photograph, second and third from the right, were brother and sister.

Associated most closely with Highland sporting estates, district checks are working cloths of the good wearing quality, and have their origins in the earliest Highland traditions of weaving, for which the process of dyeing the wool was reliant on berries and lichens. Consequently weavers, instead of weaving whole webs in a single colour, elected to weave in checks and stripes of different colours, and consistency in the appearance of the cloth led to the reproduction of patterns that were easily identifiable, and

Photograph of the millhands taken in front of the mill c1915 (courtesy of Graeme Stewart)

capable of being remembered easily by the weaver [63]. The original colour of the wool itself, from the raw material, had a bearing on the cloth produced, and cloth woven in two shades was known traditionally as 'shepherd's checks'. These distinctive, and hardwearing cloths, although intended for the ghillies and gamekeepers of the upland estates, came to be adopted in time by the landowners themselves.

District checks associated with the Knockando woolmill- the upper is the Knockando check, and the lower the Tulchan (ES Harrison) [62]

ES Harrison's 1968 book, *Our Scottish District Checks,* lists two of the patterns of estate cloth produced at Knockando – illustrations of both of them, the Knockando and the Tulchan, are reproduced here, but the list was much longer and included cloth for the Pitgaveny, Pitchroy, Arndilly, Carron, and Elchies estates [64]. With the exception of Pitgaveny, a Dunbar estate to the east of Elgin, all of these estates were local to the mill, falling within Strathspey. Graeme Stewart, Duncan's son, recalls that cloth was made also for celebrities when visiting the area, and that there were a number of checks woven for the Glenurquhart estates in Inverness-shire, and one for a branch of the Campbell family, probably the Argylls, for use as carpeting [65]. Cloths for other estates have been added to this list up to the present time in the continuation of a time-honoured tradition between patron and weaver.

However, it would be wrong to suggest that district checks were ever the mainstay of the business. Mention has been made of heavier yarn used for carpets and, with the onset of World War I a significant part of the trade was dedicated to the fabrication of blankets which had to be supplied to precise specifications. This work resulted in further investment in the mill, and it guaranteed local employment. The order books prepared during this period reveal large consignments despatched to an agent in London, and to the Crofter's Agency at an address that was also in the capital, while some orders were sent to army depots in Scotland. Local agents for the mill were based in Lossiemouth, Whitehills (Banffshire), while finished goods were sold direct to retailers in Elgin.

An important part of the trade, that can be forgotten, is the degree to which textile producers of the Northeast collaborated with one another, and in this the woolmill was no exception. Spare parts and expertise came occasionally from Johnstons of Elgin, and second-hand machinery was frequently acquired from other local mills. Relationships between the Smiths and the Laidlaws of Keith were always very cordial, and it was probably the case that Laidlaws would have outsourced work to the Knockando mill when their own factory was overstretched with orders.

Graeme Stewart recalls his father visiting the Frasers, millowners, at Dufftown, as well as regular visits to the woolmill at Dallas where it is believed that the old mule had been sent when the new one was installed at Knockando in 1870.

Photograph taken in front of the Woolmill House in 1928 during a visit by Mr and Mrs Adam Laidlaw of Laidlaws of Keith; from left to right Adam Laidlaw, Emma Smith, Mrs Laidlaw, James Smith (courtesy of Graeme Stewart)

Duncan Stewart (courtesy of Graeme Stewart)

In the 1950s, some of the mill processes were no longer viable, and much of the wool dyeing and washing of blankets was done by Laidlaws, as indeed was tweed finishing [66]. At this time the tenter frame in the field was still in regular use for stretching out blankets and air drying them, in preference to using the heated drying shed. Despite the fact that the trade of millwrighting had not yet died out in the area, due to the number of meal mills still in production across the Northeast (they survived here much later than elsewhere in Scotland), mechanical repairs would often be entrusted to the local blacksmith, a link with the local economy that is as strong today as it was then. As part of rural bartering system that had once been a part of everyday agricultural life in remote areas, a local economy based on mutual support, blankets would be exchanged with farmers for the supply of 15 lbs sacks of raw wool [67], and a nominal contribution would be made towards the labour involved in their manufacture.

The croft and the mill could not have operated without the services of a 'loon' – Northeast parlance for a young employee – a tradition that was maintained up to the 1950s. The 'loon' lived in the tiny loft above the single storey section of the Mill House, directly above the kitchen, and approached by a stair from it. Originally the space had been occupied by a maid [68].

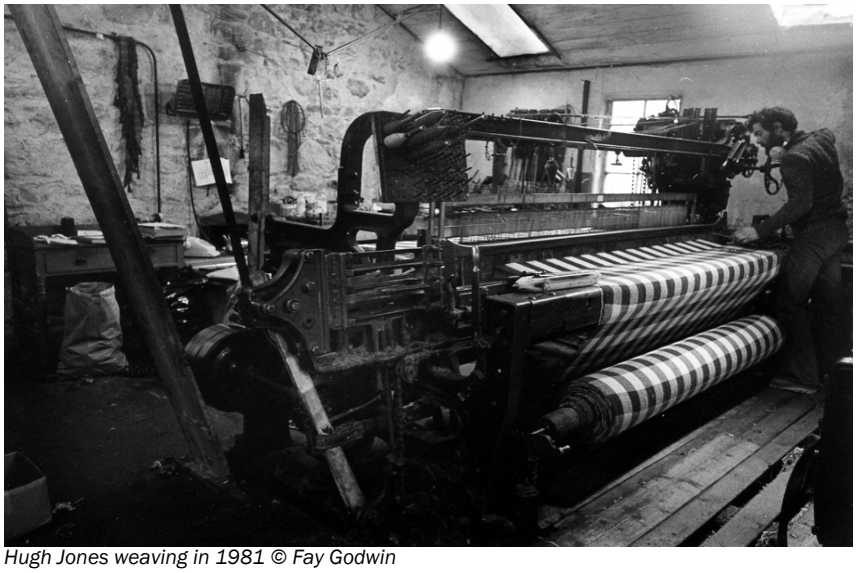
Winnie Stewart at work finishing off in the shop, or 'office' (courtesy of Graeme Stewart)

Duncan Stewart retired from the business in 1976, and for a few years he continued to farm the land after passing the mill onto a collaborative of three owners, of whom Hugh Jones emerged after a short while as the sole proprietor of the mill, sustaining a long tradition of textile production right up to the present time. As Hugh was a novice to the textile trade, Duncan passed on his skills to him and became his mentor. Duncan and Winnie Stewart passed away in 1991, and 2001, respectively. In some quarters it had been assumed that, on Duncan's retirement, the mill had been mothballed, and in this context the following account, written in 1976, is of interest

(Knockando Mill).....has only recently ceased production and all the machinery is still in position. It could yet be brought back into use reviving a traditional craft skill on its original scale. [69]

The same source recorded that, in the same year, Speyside Weavers at Archiestown was still in production.

In addition to JM Grant's late nineteenth century watercolours, our understanding of the mill, and those who had populated it, is greatly enriched by the legacy of the surviving photographs of the mill families and its workers. The significance of the site is not purely in terms of what survives of the machinery and buildings, important though they may be; it is valued as much through an understanding of those who had made the place what it is today, and whose enterprise ensured that its place within the local community has not been severed, as has happened elsewhere on the Scottish mainland over the relatively short space of the past fifty years.



Hugh Jones weaving in 1981 © Fay Godwin

That sense of continuity and historical associations may still be found among the trustees of the Woolmill Trust, who include among their number Duncan Stewart's son (who has supplied the author with much of the family history for this section) and a former partner of the present weaver, John Widdaker, who was present when the mill was given a new lease of life in 1976, in what must have seemed at least then, if not now, highly inauspicious circumstances given the direction in which the woollen industry was going, and in considering how few of the Moray mill companies have continued in production. Through Hugh Jones's enterprise, and tenacity, it survives also in the perpetuation of time-honoured craft skills.

BEST WOOLS TO USE FOR BLANKETS.

English and Cross Breed Wools. Black-Faced Wools make a very good wearing Blanket.

LADIES' TWEEDS

Require to be made from English and Cheviot Wools.

GENT.'S TWEEDS

Can be made from Cheviot, Cross, and Black-Faced Wools.

KNITTING YARNS

Should be made from Cheviot and English Wools only.

Black-Faced Wools will not make Knitting Yarns.

ESTABLISHED OVER 100 YEARS.

Price List for 1931

A. SMITH & SON

MANUFACTURERS,

KNOCKANDO,

MORAYSHIRE.

MANUFACTURERS

OF

BLANKETS, TWEEDS,

KNITTING YARNS,

AND

TRAVELLING RUGS.

Prices of Manufacturing for 1931.

BLANKETS, 12s 6d per pair.

SINGLE BLANKETS, 6s 6d each.

LADIES' & GENT.'S TWEED according to pattern.

WINCEY SHEETS, 6s 6d each.

PLAIDING, 28 in. wide, 1s 6d per yard.

PLAIDING, 36 in. wide, 1s 10½d per yard.

BED COVERS, 12s 6d.

TRAVELLING RUGS, 18s 6d (in all tartans).

KNITTING YARNS, 6d per oz.

Dyeing extra.

WEIGHT OF UNWASHED WOOLS REQUIRED

BLANKETS, 15 lbs. for 1 pair Blankets.

LADIES' TWEEDS, 56 in. wide, 3 lbs. to yard.

GENT.'S HEAVY TWEED, 2 lbs. for yard of 28 in. wide.

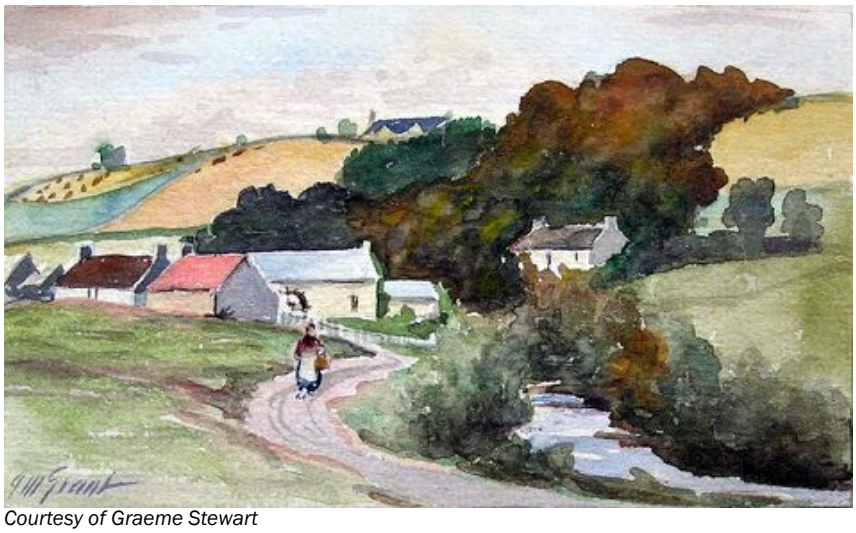
PLAIDING, 1¼ lb. for yard 28 in. wide; 2 lbs. for yard 36 in. wide.

1 lb. Wool gives from 1 to 1¼ Cuts according to quality of Wools.

Price list for the woolmill of 1931, giving instructions to farmers on wool to be supplied to the mill, and on their purposes in addition to the price of manufactured goods (courtesy of Hugh Jones)

4 Evaluation

4.1 The woolmill, and ancillary structures



Courtesy of Graeme Stewart

By all accounts the waulkmill was geared up for textile production and well established by the middle of the nineteenth century. The surviving records suggest that in the decade before Simon Fraser, and his son, joined in 1851 the business developed by the wool dyer, Charles Grant, by then run by his widow, there were two labourers associated with the textile production. The site by this date would have embraced at the very least knitting, spinning, carding and fulling (or waulking), and probably comprised other activities in the move towards operating as a vertical mill. The latter operations, being labour intensive, were likely to have been mechanised in some form, and would have needed to be close to a reliable supply of unpolluted water. The arrival of the Frasers implies that weaving had already been introduced, and it is probable that they brought with them their handlooms as the use of mechanised looms in rural textile mills generally followed later in the century, requiring dedicated space to be fitted up with suitable power systems in place.

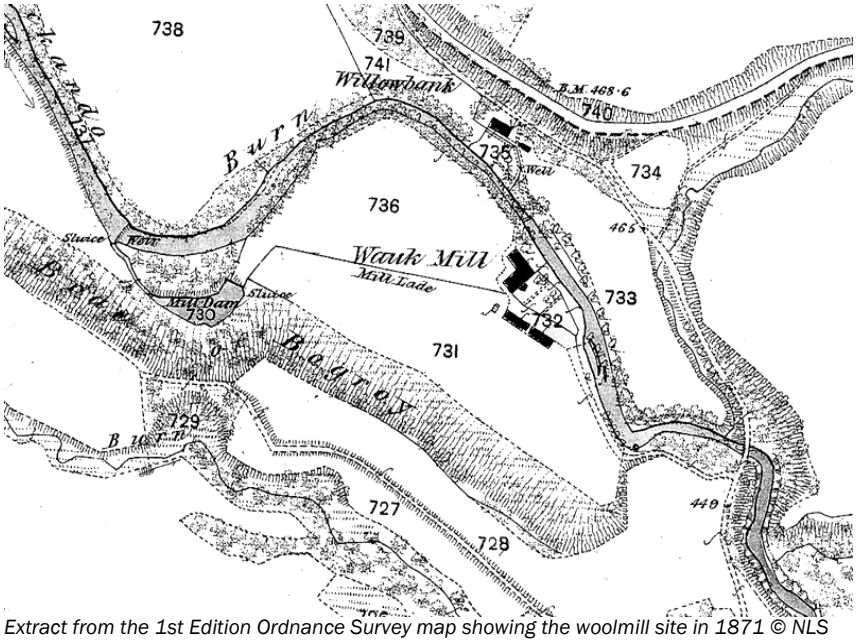
There are few clues within the existing structure as to what may have survived from earlier buildings on the site associated specifically with textile production. While, at the beginning of the century it would seem likely that this would have been carried out as a cottage industry, on account of the fact that the agricultural structures did not appear until the last quarter of the nineteenth century, at least one of the two cottages on the site must have been of a traditional layout in supporting living accommodation at one end and with the animals housed at the other. It is probable that the earlier of the two cottages had been the more easterly of the pair, closer to the public road, as one of the delightful watercolours by JM Grant (see above) suggests that this had been the more primitive, with a single chimneyhead at the far end, denoting where the living accommodation must have been. The red colour of the roof may indicate that the thatched finish had been replaced with pantiles, or more probably, corrugated iron. The structure appears to have no wall openings to the rear wall.

If, because of the scale of the operations textile production was focused away from the cottages, it is logical that it should be where the mill is

Junction of masonry between the wash house and the main mill structure

situated now, and conceivable that the orientation of an earlier workshop on the site had governed the position of the present structure. There are strong grounds for suggesting that the structure that is noted as the former wash house, adjoining the southwest gable, could have preceded the construction of the larger mill enclosure; the construction of the walls, of field stones, is much more rudimentary. By careful examination of the 1st and 2nd Edition Ordnance Survey maps it can be seen that this structure was already in position and absorbed into the rest of the complex. Had it been contemporary with the two storey main mill block, and erected by the same masons, the construction would have been identical, but there is a very clear risband (vertical) joint between this and the quoins (corner stones) of the adjoining section of wall. A structure in this location appears on one of the JM Grant watercolours.

Could this have been an earlier workshop? The position of the building in relation to the line of cottages would have been logical, and indeed production of cloth could have continued while the new mill was under construction. It is possible, too, that this structure might have had a small timber waterwheel on the end gable if some mechanisation had been introduced earlier than may have been thought. The floor of this structure sits lower than that of the machine room, against the lie of the land, and it could have acted as the original wash house and dyeing room. There had been a connecting door from the beginning, bricked up no later than the early twentieth century, as the bricks are of the large Victorian face dimensions, bedded and pointed in lime mortar.



Extract from the 1st Edition Ordnance Survey map showing the woolmill site in 1871 © NLS

It is apparent from studying the surrounding landforms that the mill foundations were set at a lower level than the natural fall in the ground. In most other respects the position of the mill defies logic and it does not appear to be where expected. Even if it had started its existence with a small waterwheel on the gable, the far gable would have been a more logical for it in terms of coping with the flow of the water and with a tailrace, although sometimes the configuration of the land in finding the easiest route for an elevated lade would override the more obvious considerations on siting. Further, it might have been more logical for a mill with a single waterwheel to have been positioned to be more or less parallel with the watercourse, once more with the waterwheel on the far side where fewer problems might be encountered in controlling the flow of water. Curiously, the arrangement where the lade crosses the path leading into the mill

Discarded pipe from the lade system

appears to be shown differently on the 2nd Edition map, although the earlier arrangement could have been simply an error of draughting.

With the arrangement as it is, the course of the lade appears unnatural; the sharp bends, straight lines and earth banking to support the salt glazed ware socketed drainage pipes, would have been devised to suit the use of this technology as the preferred choice for an overland lade. The technology was, of course, by now well developed with the introduction of street drainage in the first wave of public health improvements of Britain's cities and towns, which had got underway in earnest in the 1830s and 1840s. Given the restrictions of the pipe diameter, the elevated height was important to obtain the maximum efficiency, and hence power, to be gained from an overshot system. In all other respects, however, the elevated lade was an imposition, reducing the headroom critically at the principal route into the mill, and constraining freedom of movement between the two parts of what must have been previously a large, single field enclosure.

Although there were clay brick and tile factories in Moray and Banffshire – at nearby Craigellachie, at Lochside on the outskirts of Elgin [70], and a sizeable unit at Whitehills, near Portsoy – it was unlikely that any of them would have the capability to produce salt glazed pipes of this diameter (18 inches) which required patented extrusion plant to be installed. The local tile factories would have been set up principally to address the revolution in land drainage which was well underway in the 1840s [71]. Pipes of this large diameter must have been imported into the area, either shipped into to one of the Moray Firth harbours, or transported by rail. Given the distance by road, and the difficulty of the load, it seems probable that these had arrived by rail, which suggests a date after 1863 when the Strathspey Railway had opened, running through Knockando on the route from Craigellachie to Boat of Garten, as an extension to the Morayshire Railway.

The cast-iron sectional waterwheel

The waterwheel with the end of the penstock visible

The mid-1860s date fits with the site evidence, and with when, it is believed, the waterwheel may have been installed, brought from the former mealmill at Pitchroy (approximately three miles from the site of the woolmill). The cast-iron wheel, capable of being dismantled and transported in sections, has an overall diameter of fourteen feet with eight radial spokes; forty buckets were accommodated, and the axle shaft (or 'axle tree') is octagonal. It is difficult to see evidence of differing build periods to the masonry of the east wall, which is remarkably consistent,

allowing even for the tighter joints and higher quality of masonry around the wheel axle, to deter water from entering the inside of the building and provide stability against the rotational forces of the machinery when in action. Also it coincides remarkably closely with the time that the mill had been taken over, probably around 1863 or 1864 (the precise year is not known), when the new firm of Alexander Smith & Son was established. After this takeover investment was made in at least three, or possibly four identifiable stages to achieve the aim of a commercially viable fully vertical mill before 1903, at which all of the processes of textile production could be undertaken. It was also the period from which full mechanisation of all of the processes seems to have been attempted. These walls are built consistently in a mixture of sandstone, whinstone and granites from several local quarries, of varying colours of yellows, browns and greys, finished with a traditional Morayshire lime sneck harled finish, which would have covered the larger part of the face of the walling with only the larger stones appearing. There is evidence that the resulting finish had been given an overall coating of limewash. Remnants of this treatment can still be seen relatively undisturbed at the northeast gable at high level.

The lintols to the window openings are of large sections of dark grey schist, and to some of them the grooves where the stones have been split with the quarryman's iron rods can still be seen, left undressed. Window openings are treated in a fairly unsophisticated, but traditional way, coating the inside reveals with a thin slurry of render to regularise the face, and to save on having to dress the reveals with any degree of precision, other than to achieve a true arris on the outer face. There are no checks for the window frames – in essence, this was a continuation of the same traditions of Northeast rural construction in which the earlier cottages on the site had been built. It is possible that the large window to the right of the waterwheel (see left) had been introduced later, at around the same time that the single storey extension was built to accommodate the spinning mule, to improve the amount of light entering the workshop in an area which would have been, by then darkened, by the new extension. The original window, which must have matched those of the northwest wing, appears to have been replaced with a sash and case window, probably for improved ventilation, and this may have occurred in the early years of the twentieth century, or possibly later, even. There is evidence of a small window to this wall having been blocked up, in close proximity to the rim of the wheel and to the immediate right of it.

Detail of one of the 42-pane workshop windows

Southwest elevation of the mill shed

If the assumptions regarding dating are correct, which is supported by the site evidence, the second phase of development will have followed in swift succession. The evidence is very strong that the mill had been, initially, a straightforward rectangular shape of two storeys, with restricted headroom at first floor as we see today, with the sturdy rear wall housing the

waterwheel buttressed by the two gables. The masonry of the southwest gable where, unlike the opposite gable, there was evidently no need to provide a flue for a fireplace, is built up to just above the level of the first floor, with the exposed areas of the upper gable clad in timber. The fourth wall, facing northwest across the field, would have been fairly typical of workshop construction for the time, of lightweight timber construction with regular 42-paned openings of which all had originally horizontally pivoted opening lights at the centre, most of which still survive. Within these there is a surprising amount of historic glass still left, which is worthy of protection and preservation. We have a fair indication of how this would have appeared in one of the earlier watercolours by JM Grant, which shows the original two storey section of the mill behind the projecting single storey wing, which followed later in 1870. The evidence of the building, however, is slightly conflicting: while it is abundantly clear that the inner line of timber posts and beams supporting the upper floor and roof continued to meet the northwest corner of the masonry gable, the configuration of the roof structure above this line, and the canted wall above the machinery bays indicate that the screen of timber and glass may not have been vertical over its entire length. This leads to the conclusion that there might have been a lean-to roof in position over at least part of the length of the northwest glazed wall, even though the pictorial and cartographic evidence does not support this.

Early watercolour by JM Grant showing the mill before the additions of the weaving shed and lean-to extensions on the re-entrant (courtesy of Graeme Stewart)

It would seem that the Smiths' investment had been targeted at the essentials needed for commercial production - of building a sturdy masonry shell (but strictly, only where it was needed); the acquisition of textile machinery and the required line shafting; and installing the waterwheel and the associated site infrastructure. This must have exhausted their initial capital, as the remaining works in completing the enclosure around the machinery had been carried out with stringent economy, almost without any regard to longer term implications for the ongoing repair of the structure. This might be taken to suggest a lack of confidence about future trading.

While we do not know if the estate contributed to the capital cost of the improvements, as landlord, it would seem likely that, had it done so, the structure might have been built with more regard for longevity. By comparison, given the feudal basis upon which a miller related to the community, upon which all parties were interdependent, district mealmills merited investment by country landowners, and they would be built to a good, fireproof standard whenever kilns were incorporated. The vernacular construction of the woolmill was reflecting a common tradition found in the erection of workshop buildings for trades that may have been marginal, the

sort of makeshift structures that emerged on an everyday basis in the eighteenth and nineteenth centuries in the backyards of the streets of Scotland's towns and villages [72]. Being of lightweight construction, the walls would have been flexible, capable of being dismantled easily and re-erected, exactly as happened at the woolmill in the various stages of its development. There is a remarkable consistency in these forms of construction throughout the various structures on the site, including the agricultural structures that accompanied the years of expansion of the mill, and this might be put down to the fact that the work would have been carried out by the same family of carpenters whose workshop had been close to the site, at what is now called Woodbine Cottage. Alex Innes would have carried out the alterations to the cottage in all probability, and it is known that his son, Sandy, fitted out the Woolmill House [73], which indicates that they were capable of undertaking high quality work, as all country joiners. The common treatment of constructing walls of creosoted 'board-on-board' vertical timber linings is found here in abundance, although there are subtle differences to be found – in the more important work the boards are supplied to a constant sawn face whereas the lesser work (for instance, the extension to the front of the wash house) utilises boards of widely varying widths, possibly even from the tenants' own sawmill if such existed at this time. Again, it is important that these variations are respected when carrying out repairs to the fabric. We have here, as elsewhere on the site, the guiding precept of 'making do' with whatever was available to avoid the cost of supplying new purpose made items – the door into the wash house, with its proprietary ironmongery, has been reused from one of the openings into the steading, while the front door into the mill has been cut down from a pair of doors that had turned up at the joiner's workshop, presumably from another, more sophisticated building. It had been fitted with a large wooden cased rimlock in an earlier incarnation.

The precarious nature of the attic roof construction, showing clearly the remnants of the original asphaltic roof covering

In time, the impermanence of the construction led to its own problems. To save on weight and the amount of timber needed, the angle of the roof pitch is relatively low, and the timber sections are slender. Worse, they were of poor quality home-grown timber (confirmed by the findings of the timber infestation report [74]) and, with the levels of residual dampness throughout the building, this has had the inevitable consequence of attracting the attention of woodboring beetles, affecting what little residual strength the sections may have had. With such a low roof pitch, the more traditional finishes could not have been contemplated, and a highly

unusual, if not experimental material was introduced, of asphaltic pitch brushed hot onto the timber sarking, bound by what appears to have been oat straw as a by-product of the farming activities, and possibly even by strands of wool. The drips from this material, when it was applied to the roof, are visible on the face of the masonry of the wall housing the waterwheel. Natural rock grade mastic asphalt, a combination of limestone and bitumen, was imported from France and Switzerland, and was patented in the 1860s [75]. Much of this material still survives, sandwiched below an overcladding of corrugated iron sheeting on battens, from which it can be assumed that the compound, although it would have been capable of being repaired, had suffered an early failure in use. Ironically the overcladding of the iron sheets has resulted in the roof structure, already under-designed, becoming even more overloaded. Even if it had not failed to remain weathertight (the movement of the lightweight roof and sarking boards must have been a constant problem) the working conditions on hot summer's days with the sun beating down on a thin, dark coloured coating such as this must have been quite unbearable.

The attic floor – the machine on the left is an early wool blender, or 'teazer'

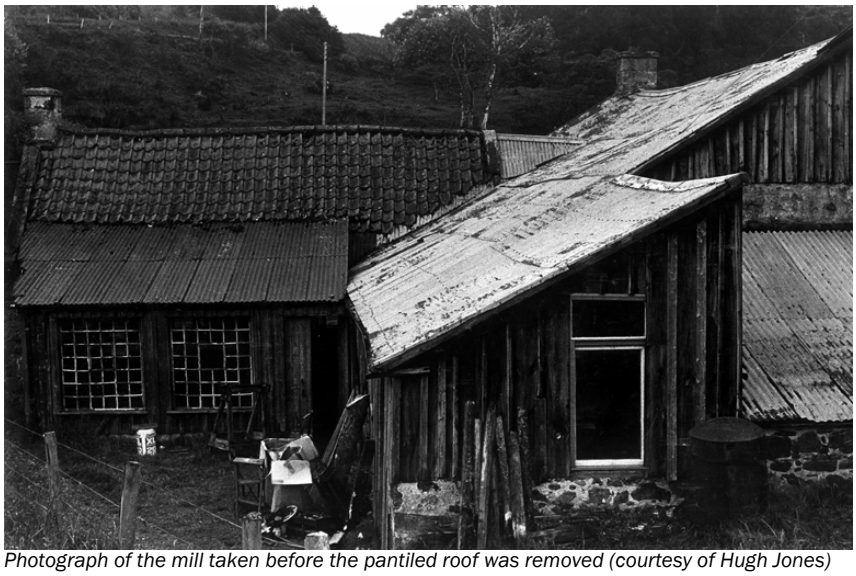
If the evidence points to the woolmill operations having been expanded under new management of the site in the 1860s, it could not have been long before the second phase of development began in earnest. Clearly Smith must have decided that the output could have been enhanced by the incorporation of a spinning mule and so, in 1870, he commissioned one direct from Platts of Oldham. It is understood that the old mule was acquired by the mill at Dallas, and when it closed down it was transferred in turn to Ballantynes [76]. The precision with which the machine sits in the space, for operating reasons mounted on a suspended timber floor (the remaining floors are all solid) all point to the fact that the single storey extension to the mill on the northwest side adjacent to the burn was created specifically for this machine. The opportunity was taken to provide a floored out loft for storage, with a high level access door at the new northwest gable. From here the bales of raw wool were introduced for feeding to the wool blender, or teazer as it was known, in the adjoining attic. The chimneyhead above the door is a mystery – with the position of the door lintol it could never have accommodated a flue line, and perhaps there had been a change of heart over introducing a further hearth here to supplement that built into the adjoining gable which, of course, must have been rendered out of use once the mule had been installed. Ultimately, but only when the weaving shed had been added, was the heating problem

Endplate to the mule with the manufacturer's name and date stamp

The Platt spinning mule of 1870

Heating pipes to the rear of the mule served by the boiler in the weaving shed through the original fireplace on the gable

to be overcome with the insertion of patented 'DESIDERATUM NO 8' solid fuel boiler which used the flue line served by the former hearth, stoked from the weaving shed, with the bank of heating pipes fitted to the base of the wall behind the mule. The extension appears on the 1st Edition map, surveyed in 1871.



Photograph of the mill taken before the pantiled roof was removed (courtesy of Hugh Jones)

Clay pantiles stored on site

The construction of the walls of the extension for the mule has the same consistency as the work recently completed. The windows appear to have been double-margined (with a correspondingly wide central mullion, or central division) with large panes of glass in a 'lying pane' layout, by now unfashionable elsewhere but, no doubt, quite acceptable for a lowly workshop. All have been replaced subsequently with modern timber windows. At this time some of the wall framing and windows of the wall would have been reused in the wall facing southwest. The roof construction appears more robust than the main block, and had taken a pantile finish from the outset as Grant's watercolour and early photographs confirm. As to why pantiles would have been preferred over locally available slate from the quarries of Cnoc Fergan at Tomintoul is a further mystery, other than whether it was purely a matter of cheapness, and related to the fact that the material might have been easy to transport with the opening of the railway. Certainly it is recorded that the brick and tiles works at Elgin was producing roofing tiles at around this time [77] even

though it was not a common commodity in the area, with the continuing ease of obtaining supplies of Scottish slate, and with many of the local quarries still operating. The transaction might have related to some sort of payment in kind, for all we know. Although the pantiles have been removed from the roof, replaced in the 1970s in corrugated iron, they are still stacked neatly on the banks of the burn. The roof had no sarking boards fitted, as the tiles would have been fixed to tiling battens originally. The bottom courses of the roof were laid in roofing slates, following the established East Coast tradition of vernacular building in the villages of East Fife and the Lothians.

Early photograph of the interior of the weaving shed (courtesy of Hugh Jones)

Detail of 1896 Dobcross loom, and below, the weaving shed today

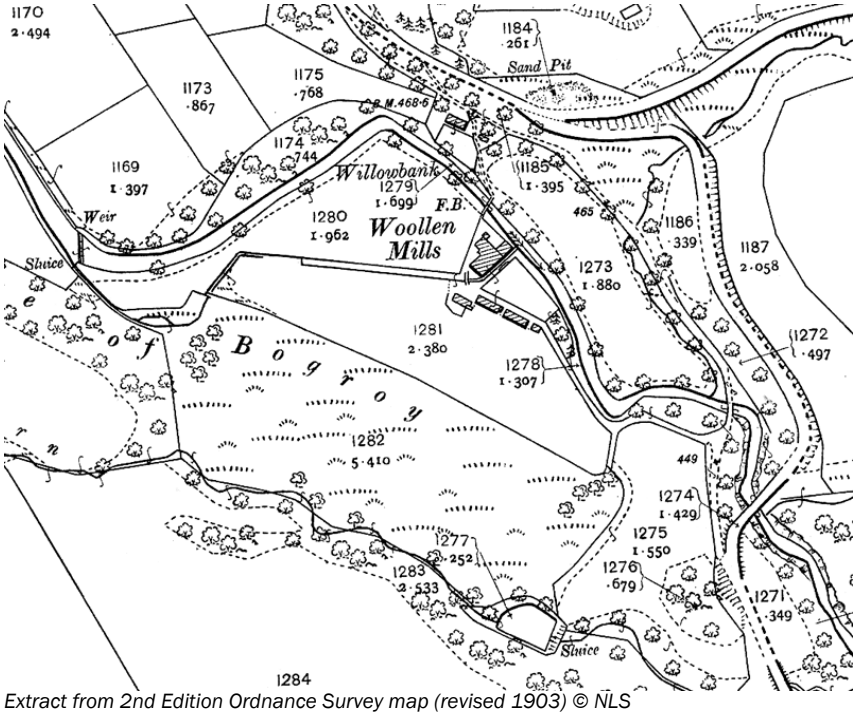
Detail of shuttered mass concrete wall to the weaving shed

The mill from the southeast

The addition of the weaving shed marks an important milestone in the development of the complex, and must have been added after the publication of the 1st Edition map, presumably in the 1880s, as it was in place before the Woolmill House was built, replacing the earlier cottage as shown on the watercolour. By now the site must have been reaching full mechanisation of all of the processes with a corresponding increase in output. Here again the construction is of interest in suggesting that cheapness was an issue, and in embarking on what was, for Morayshire, a county noted for its tradition of masons, new and relatively untried technology of thin wall construction in mass concrete, harled on the outside and plastered direct to the inner face. Where the thin coat of harling has failed, the shutter marks on the exposed areas of the walls are visible. Although no analysis of the walling has as yet been carried out, it might be reasonable to assume that it utilised Portland cement as the hydraulic element of the mortar mix, no doubt readily available with the improvements in transportation. Lime would have been sourced locally. The construction was repeated around the site where dwarf walls were inserted to support lightweight walls of timber. Once more, the roof timbers above the weaving shed appear to have been hopelessly undersized, with the consequence of the roof appearing to be close to collapse, which has been prevented by supports having been introduced at the nodes of the trusses by temporary propping. The windows on the opposing walls are original, and maintain the lying pane pattern of the slightly earlier windows but, curiously the astragal mouldings differ very slightly. An early photograph of the inside of the weaving shed shows that the northwest wall had two windows originally, which appear to have been fitted with gauze screens. Two Dobcross looms occupy the shed at the present, manufactured in 1896 and 1899 respectively, of which only the latter is currently operational. The same photograph suggests that there could have been a narrow loom towards the gable end of the shed during the early years.

The mill from the southwest

If the development of the site had benefited from improved transport links, so it follows that there was a potential for the site to expand beyond the needs of the immediate community by exporting goods for more distant markets. While this was undoubtedly the case when blankets were despatched to army agents during World War I, the trend may have started



Extract from 2nd Edition Ordnance Survey map (revised 1903) © NLS

earlier in the 1890s, meriting the acquisition of further machinery, even if most of this was to be second-hand. Accordingly, the mill expanded once more, and by the time that the survey work was carried out in 1903 for the 2nd Edition map the footprint corresponds accurately to what is seen today. The evidence suggests that even these changes were not well coordinated, and may have been carried out in stages, with the first of these extensions being that above the carding condenser for which the eaves would have matched that of the single storey wing erected for the mule. Most probably the wash house received its extension forward to the same line at the same time, or shortly thereafter, as the construction of the timber frame differs marginally, and was finished in a monopitch roof. The final extension would have accommodated the teasel gig and the present entrance into the woolmill, by adding a low pitched roof in front of the tiled roof pitch above the spinning mule. The northwest wall is angled slightly, presumably to avoid further excavation into the bank. On each occasion these extensions were made, the multi-paned windows from the earliest timber framed and lined walls of the main mill structure were repositioned, and a corrugated iron finish applied to the lean-to roofs. The rudimentary nature of some of the construction – for instance the hidden gutter at the junction of the two latest extensions – has triggered recurring problems of maintenance with resulting damage to the building structure. However, the somewhat ramshackle appearance of the structure, with its wavy roof ridges and ordered chaos internally is one of the attractions of the property, which must not be lost in any conservation strategy.

The woolmill is remarkable for the fact that it had been successful in accommodating the expansion of the site within a single envelope, even if the construction techniques had been pushed to the limit due to the lack of capital required for wholesale rebuilding. Had the commercial output been less marginal the appearance of the site would have been quite different, and much of its charm, and picturesque qualities, would have been lost. It is of interest also to note that, had the lade and waterwheel been located elsewhere - for instance, on the side of the mill facing the field to the west – then future expansion would have been constrained heavily, and would have interfered with the progressive enhancement of the private gardens to the front of the Woolmill House and the cottage, which were clearly of importance to the mill families.

Interior of the mill

The winter drying shed and interior

The privy set within the garden and interior

The only structure connected with textile production which is not attached to the woolmill is the winter drying shed, a small timber framed structure with sophisticated diagonal bracing at the corners, and with a monopitch roof, clad all over in corrugated iron. It is not without interest, although it has not been used for many years and is currently in a very dilapidated state. It is also one of the relatively few structures on the site that can be attributed firmly to the twentieth century, apart from the extensions to the old steading and the sheds to the rear of the mill. The shed incorporated round tenter poles at high level for hanging the cloth for drying, and at the northwest end there was space for a boiler from which a tall stove pipe passed through the roof. Air movement, to encourage the drying of the cloth, was achieved by large louvered panels, operated from a central pole.

Although slightly tucked away on the path next to the waterwheel, the timber shed for the privy is an important, if vulnerable, element of the site. It seems probable that, initially at least, its use would have been reserved for the occupants of the cottage. As so many other features of the site it is an evocative survivor, built evidently with loving care. It retains much period detail, such as the basket for the toilet rolls, and the ubiquitous sanitary ware from Barrhead, here consisting of a Shanks WC bowl and a cast iron cistern by Saunders & Connor. It should not be lost in any scheme of renewal. The door is missing, but the roof is clad in a single sheet of zinc.

With the exception of the lean-to sulphur shed, added to the northeast wall of the single storey wing facing the burn, and a gas carbide shed added onto the same elevation, both of which seem to have appeared in the first decades of the twentieth century, the constant round of extending the woolmill ceased. It appears that some of the textile machinery might have been replaced with other second-hand items, and the collection added to. The increase in production for blankets during World War I would have highlighted the need to rationalise some of the processes, while already others which had been central to the operations of a fully integrated vertical mill were being carried out elsewhere. The last of the machines to be installed within the mill, based fundamentally on Victorian engineering patterns and practice, was the automatic feed set purchased new in 1919 from The Automatic Feeding Machine Co Ltd of Rochdale.

The woolmill and weaving shed in 1928 (courtesy of Graeme Stewart)

While it is relatively straightforward to claim that the importance of the interior of the mill lies in the survival of very significant Victorian textile machinery, of which some is undoubtedly rare, its overriding character is rather more difficult to define in words. The machines, purposeful in

appearance, many of them over-scaled for the size of the spaces that accommodate them, are all visually arresting. There is nothing quite like being in the mill when any part of the machinery is operation, when the all of the senses are assaulted by the sounds and movement of the machinery, by the corresponding vibration of the structure, and by the pervading smells of oil and lanolin ingrained from 150 years of continuous usage. One can only imagine what it would have been like with the waterwheel fully operational, driving all of the line shafting.

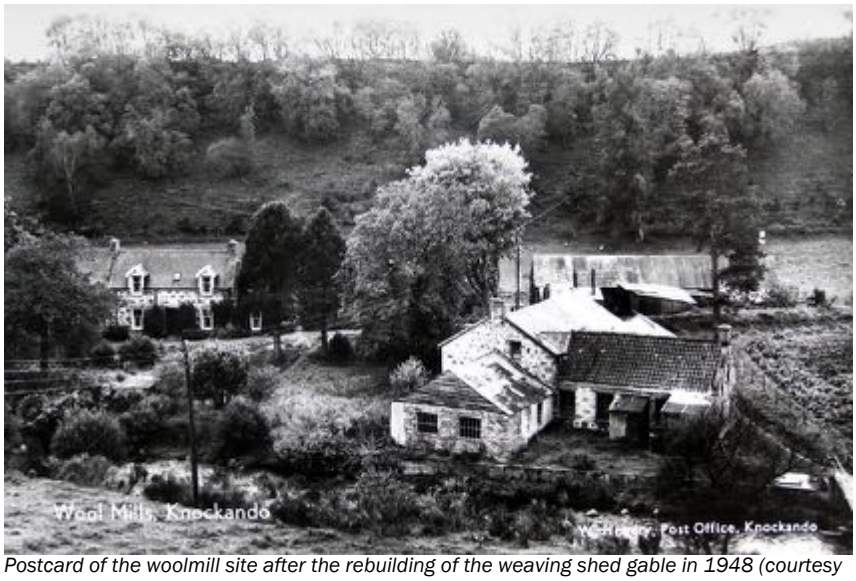
Interior of the mill © RCAHMS

Some impressions are more easily captured, for instance, those conveying the heavy, constant use to which the building had been subjected when working at its peak, of the wear on the handrails and treads leading to the attic, and the build-up of lanolin and wool oil to the wide boards of the attic floor. The colours are also redolent of a past age – of the green tints to the machinery guards, line shafting blocks, loose furniture and timber posts, and the deep pink of the beams, all set against a bright limewashed surface treatment, now faded, to the walls and the underside of the first floor joists. Externally the dark shade of the creosoting had been enlivened by the crimson colouring of the woodwork. It is vital that these qualities, provided by the patina of age and functional use, are preserved.

Duncan Stewart at work in the weaving shed (courtesy of Graeme Stewart)

A chapter in the history of the mill site closed in 1949 when the waterwheel and associated power systems were shut down when the line shafts were powered by an electric motor fixed at the end of the system. The gas lighting installation would have been declared redundant at this time. The previous year, 1948, marked a natural disaster, when the end wall of the weaving shed was washed away in the floods of that year. Graeme Stewart recalls witnessing the aftermath of this catastrophe, not unlike that the descriptions of the terrible events of 1829 when the upper mills were devastated by the floodwater. The damage was attributed to trees having been carried down the burn lodging against the central concrete pier of the elegant bridge that had replaced the first structure, causing the water to build up until it was released in a torrent. He saw one of the Dobcross looms coming to rest in the burn, which was subsequently rescued and returned to operation [78]. When the wall came to be rebuilt with the insurance money the bridge was rebuilt without the central pier, and the walls alongside the burn built up in concrete to give additional protection. The contractors for this work were Sharps of Forres. They must have decided that the original wall finish was incapable of being replicated and so the damaged gable was rebuilt in modern clay brickwork, with the gable finished in shiplap boarding. The cills to the two windows to the weaving shed (replacing a single window at the centre of the former gable) were left in a rather vulnerable state, with the 'frogs' of the bricks left upwards. As a consequence, these bricks are susceptible to frost damage.

Former brick chimney to the wash house



Postcard of the woolmill site after the rebuilding of the weaving shed gable in 1948 (courtesy of Graeme Stewart)

In the postwar years the policy has been always to carry out minimal repairs to keep the property operational. Many of these repairs are honest, and they have the merit of being reversible. At the time the mill was taken over in 1976 by the present weaver, Hugh Jones, the slender brick chimney to the former wash house had developed a gravity-defying lean and had to be taken down before it fell. When the tiled roof failed above the spinning mule it was renewed in galvanised corrugated iron, and localised strengthening carried out to the roof structure. Where windows have failed, they have often been replaced with old windows salvaged from other buildings, in the spirit of the earlier repairs and improvements. Where beams or roof joists have failed, simple frames have been erected to transfer the load, props inserted, or a steel portal frame introduced to provide a helping hand. The solid fuel heating system continued in use during Duncan Stewart's time, and was dispensed with when a new electric fan blower was installed at the far end of the spinning mule. In around 1970 a stove to the weaving shed was introduced, and the pirn winder in

the weaving shed was introduced at a round the same time as its historic predecessor was no longer capable of being kept in economic use.

This philosophy of leaving the old fabric alone wherever possible has been remarkably successful in preserving the character of a building that could so easily have been destroyed otherwise.

4.2 The cottage

The cottage is, most probably, the earliest structure on the site, and is therefore of particular historical and architectural importance, and not only for an understanding of what might have gone before, and what followed thereafter. Although little is known about the patterns of occupancy, that importance is increased when it is considered likely that the property may not have been inhabited for up to ninety years and the interior has been preserved through other low grade functional uses associated with the site.

Originally it had been one of two cottages in line with one another, of which the earlier property would have been closer to the entry into the site from the public road to the east, which was taken down when the Woolmill House replaced it. As shown on the 1st and 2nd Edition maps (pages 27 and 36) the road into the site passed in front of the cottages, and would have been extended later to reach the mill, and the entrance doors therefore addressed this, so that both cottages faced northwards towards the burn. Apart from the later pictorial images the only clues to the origins of the building lie in the fabric which, on style and construction grounds, suggests that it may have been built in the period between 1800 and 1830, and therefore might relate to when Charles and Janet Grant took over the site in the mid-1820s. The evidence found in the fabric can be confusing, however, as it seems that, apart from the original sash and case windows to the elevation facing the burn, many of the elements have been moved around, which is again consistent with what was happening elsewhere on the site at a time of evolution and constant change.

It is probable that some of the work of textile production would have been carried out in this building before the mill site developed to take on more of the processes for which the site became known, and for which additional labour was needed. The area that was to become the kitchen might have been suited to the purpose of spinning and even a loom might have been located here, being the closest part of the structure to where the mill was to develop, and where there would be easy access to water for waulking the cloth. Because of the manner in which the adjoining cottage was portrayed in JM Grant's early watercolour of the site, it may be fair to assume that animals were accommodated at one end of the building, but that could never have been the case here as it appears that the chimneyheads at each of the gables are part of the original fabric, and of the same construction. As to how many families had been accommodated

North-facing elevation of the cottage

within this building from the outset can only be guessed at, but it must have been the more superior of the two houses and would have matched the sort of properties constructed with the agricultural improvements that were well underway in this area by the late eighteenth and early nineteenth centuries.

Sash and case window and detail of harling

The walls of this property are particularly well built, of coursed local granites, primarily black and brown in colour, with some stones of a salmon pink colour, with the occasional round field stone incorporated. The shallow lintols to the original window and door openings appear to be of a mica rich whinstone or schist, not dissimilar to the large lintols used later throughout the mill. The interstices between the stones are infilled with characteristic ladder pinnings of the main walling materials, typified by work of the early nineteenth century. The chimneyheads are neatly formed with plain blocked copes set over flagstones, and thackstanes (projecting stones to cover roofing thatch) are incorporated. The walls are coated in lime harling, the constituents of which appear to be of a well graded pink aggregate which provide an attractive colour. Parts of it are not original, as the evidence of the openings to the rear wall where none existed previously suggest that the property had been reharled with a thin coat of lime after they had been introduced. A fair amount of the harling still remains on some of the walls. The gables are capped with plain skew stones supported on large, well formed skewputts. Window and door openings are treated simply, angled to the general line of the inner reveals with no rebates for the window frames, and the jambs are regularised by the application of a thin coat of smooth render. The external walls of the cottage are a good example of wall construction of the rural uplands of the Northeast of Scotland, and a very common form of construction encountered in Strathspey where the walling materials are invariably hard, and unforgiving to work.

Externally, when viewed from the garden side, the property has a definite charm from its innate good proportions, as much as for the fact that an impression of age is given because the openings are relatively small in relation to the wall surfaces. The lintols are shallow and set close to the wallhead, while the sash and case windows are well proportioned with twelve small panes to each window, six to each sash. The astragal profiles are remarkably sophisticated for such a seemingly unprepossessing structure, and although attaining this standard of workmanship had

become the norm for country joiners by this time, to encounter it comes always as a surprise, particularly in buildings as lowly as steadings. It must have been a dark house, even without the mature trees that have grown up to the front of the cottage, and there is evidence that the window on the southeast gable had been widened when improvements were undertaken to the interior of the cottage in the last quarter of the nineteenth century. The fact that there had been a window to this gable confirms that the room at the eastern end of the dwelling had always been the principal apartment. The existence of a timber safe lintol and a recess within this gable above ceiling level, visible from within the roofspace, suggests that there had been a further small opening at high level at one stage.

Photograph taken c1910 showing the thatched roof finish to the cottage (courtesy of Graeme Stewart)

Interior of the roofspace showing half-rounded smoke-blackened timbers

Inspection of the roof structure confirms the suspicion that the original roof had been thatched, and this is consistent with the pictorial evidence of early photographs of the site and the watercolours of JM Grant. The rafters are set well back from the face of the wall, and are spaced out more generously than might be expected for a roof of this age designed for sarking boards to take a slated finish. There is evidence to be seen of oat straw within the roofspace, and also in the cupboard within the kitchen where it has fallen through from above. That this is the original roof is confirmed by the fact that the timbers are rough sawn, sometimes on one face only, with rounded surfaces and plenty of bark left in position. All of the joints are half checked and nailed. The roof is tied at wallhead level, but it would seem that the roofspace had been open originally as a possible throwback to the earlier tradition of open cruck-framed cottages, in which most inhabitants of the county would have lived at the time that this dwelling had been constructed. Interestingly, the remaining timbers (some must have collapsed, and were renewed when the corrugated asbestos cladding was applied) appear to have been blackened from smoke-staining, which may suggest open fires within the living area, which cuts across the clear evidence of there having been flues built into the external walls terminating in the pair of chimneyheads. A roofspace open to the living area is consistent with the evidence of a window at high level to the gable, as there is no evidence of the roofspace having been floored out otherwise for habitation, or storage, from the very limited inspection possible from looking into the roofspace where the ceiling has collapsed. It is not known exactly when the thatching was replaced but, no doubt, the regular cycle of re-thatching, and a shortage of craft skills and materials in the area as the twentieth century progressed would have been a deciding factor leading to its demise. From examining the roofspace, and the work done in renewing the roof, it is conceivable that the thatch could have limped on until after the conclusion of the Second World War, while it is

worth noting that corrugated asbestos roofing sheets came to be used increasingly from the 1930s onwards [79].

Six-panelled door to the living room

Initially, the living conditions must have been basic; more might be established by investigating the solum below the timber floors, which appear to be later additions, especially where raised throughout the middle section of the cottage. However, there is evidence of a former box bed having been located to the rear of the present kitchen in the wall recess, with a curtain rail holder at one end. The linings to the recess were refined, with beaded edges to the boards. Although on stylistic grounds it is tempting to state that the fielded six-panelled doors are in their original locations within the house, this is questionable, as the evidence of the fabric suggests that they may have been moved around and re-hung. At 28mm (barely more than one inch thick) they are remarkably slender, and that they are stable, and devoid of cracks, confirms how well they had been fabricated. They retain the early patterns of ironmongery with iron rimlocks and simple brass knobs, and it is entirely plausible that they came from the original cottage. The front door is yet another example of recycling features brought onto the site from different properties, and adapted to suit new purposes. This pair of doors could well have come out of a single lined door of a type that might have sat comfortably in a church vestry in a previous incarnation. Typically, the lock is fitted upside down.

Former dairy at the east gable of the cottage

The former dairy at the eastern end of the cottage has been built onto the gable at a later date. Built more crudely with pinnings of round pebbles it retains evidence of former shelving in the impressions left in the surviving plasterwork, while the bottom shelf of a single piece of flagstone set on brick piers survives. The structure, together with its surviving contents, is an important reminder of the domestication of the produce of the agricultural activities upon which the site was dependent, as much perhaps as the henhouse that had occupied the enclosed wedge of ground beyond the mill shop on the approach to the site. The dairy had been roofed with large self-supporting flagstones, probably from the same source as those supplied for the chimney copes, likely to have come from the slate quarries at Tomintoul.

In the cycle of incessant change, the interior of the cottage received a substantial refurbishment which had, no doubt, the intended purposes of rendering the rooms more comfortable, and to introduce a distinctive element of style that was more appropriate to the rising status of the millowners. It is believed that the dwelling may have been occupied latterly by James Smith's mother and his sister, who appear with James and his wife, Emma, in the photograph on the previous page, believed to have been taken in 1910 [80]. A neat thatched roof on the cottage is shown very clearly on this photograph. Although James's mother died in 1915, it is possible that the property would have been occupied for a short while thereafter. Had it been for longer no doubt the internal decorations to the living room would have changed again, and would not have been preserved as they appear now.

The changes made to the property seem to relate to the 1870s or 1880s. If the interior of the property had been unacceptably primitive, in the main this was overcome by lining the walls with rough sawn boarding laid butt-jointed, in preference to applying smooth plaster finishes which was reserved for the 'best room'. The primary benefit would have been improving appearance, and the insulation of the external walls. The same treatment was applied to close off the roofspaces and line the ceilings and walls,which were then covered in successive layers of wallpaper, a treatment that was not uncommon in lowly dwellings where living standards had to be improved, but where funds were restricted to make major improvements.

Fireplace to the living room at the east end

The plaster treatment was applied direct to the masonry to the three external walls of the living room, while the boarded partition to the rear of the room received the same wallpaper treatment as the other rooms. The plaster was given a distinctive pink distemper finish, not unlike the colour applied sparingly to the interior of the mill. As part of the scheme of improvements the window in the gable was widened, and a six-paned casement window inserted. The cast-iron fireplace and grate and the plain fire surround mirror the standard introduced later to the Woolmill House, while the tasselled fringe to the mantelpiece and the roller blind end holders are unexpected, and therefore important survivals. The woodwork is decorated in a neat colour scheme of dull grey and white. The patterns of successive wallpapers could, in themselves, provide an insight into the period for which the dwelling had been occupied, and perhaps even when the changes were made to the interior. In the living room one of the earlier wallpapers appears to be a William Morris print, and this, in itself, may provide the clearest indication that we have of the social aspirations of the inhabitants of the cottage at this time.

Layers of wallpaper to the living room

The adjoining room would have become a bedroom in the new layout, and the step at the door, with the direction of the floorboards changing, may suggest that the floor is overlaid on an earlier floor. A window was added to the outside wall which matches that inserted at the gable, except that it has eight panes. The lining of the window reveal suggests that this had been carried out at the same time as the lining of the walls. At the far end of the cottage the finishes were more rudimentary, and among the improvements would have been the small kitchen range and grate

which is more likely to have been installed at this stage, rather than having been an original feature of the cottage. The window added to the rear wall of this room relates to the last round of changes to the fabric, and the fact that it is a four-paned sash and case window of a later pattern confirms this, as does the fact that the timber linings to the window do not match exactly with the wall linings. The Belfast sink, and draining board, within the old window recess on the front wall of the property, look barely used.

Boarded wall linings to the kitchen and cast-iron grate

Window introduced to the kitchen

Window to the middle room

At some stage the road into the site was relocated to the rear of the properties. This would have been done for two reasons primarily – to provide privacy to the fronts of the houses to permit the gardens to be enjoyed, and to provide a more direct access to the steadings and mill, for which an increase in traffic must have resulted with the additions to the structures and the continuing diversification in agricultural activity. It seems that some further alterations were made to the cottage in response to this, and a central lobby was incorporated within the plan, or an existing space adapted, to provide access direct to a new door opening, slapped into the outside wall. The ceiling to the lobby is lap-boarded, unlike elsewhere. This alteration might have followed a change in the use of the building, perhaps for general storage, following on from the death of the last elderly occupant, Mrs Smith. The lintols of the door to the kitchen, and of the new door into the lobby are of timber, and the wall opening formed for the new door has been made good in brick, intended to be disguised by harling over the whole of the wall surface. Both of the windows inserted into the rear wall have rudimentary cills made up in cement.

At first sight, the cottage may give the impression of being a straightforward structure and, while relatively few external changes may have befallen it over the years, the interior reveals a much more complex history that has still to be understood fully. Despite the changes that have happened to the interior there can be no doubt that its importance is enhanced by the fact that the finishes, apart from where decay has taken its toll, are largely unchanged from when the last inhabitants departed. Future uses will need to take into account the importance of the layering of history, and how to ensure that these fragile surfaces are preserved without further loss or damage. In order to arrive at a deeper understanding of the fabric, a more detailed archaeological investigation, and recording of the building, would be recommended.

4.3 The Woolmill House

JM Grant's watercolour of c1905 (courtesy of Graeme Stewart)

Given the extent to which the refurbishment of the cottage revealed the aspirations of the millowners, it should be no surprise that they sought to have built on the site a house that reflected their status as manufacturers. The output of the mill was, by now, such to ensure that the company was a going concern, having established its position within the local, and wider, regional market where similar investment was occurring in the industry at around this time in Moray and Banffshire. As noted above, there had been little, or no investment in the mill after the turn of the twentieth century, and so it might be logical to expect investment to be channelled into improving the living conditions on the site.

The spur for this may have come in 1902 with the unexpected death of Alexander Smith from drowning in the dam constructed for the Tamdhu distillery [81]. While it has been surmised that the Woolmill House had been erected in the mid-1890s, this is not borne out by the cartographic and pictorial sources. From studying all of the surviving evidence, it is reasonable to assume that the road leading to the mill and the agricultural steadings was diverted to the rear of the residential properties at the time when the new house was built, and that the timber shop had been built already, before this decision had been taken. The shop is shown on the 2nd Edition map published in 1905 (see page 36), for which the survey work, upon which the revisions were made, was carried out in 1903. It shows clearly that the road ran in front of the dwellings at this stage. JM Grant, returning to the site some many years after depicting the scene as it must have appeared around 1890, shows in his watercolour the road relocated, with a suggestion that the edge of the new road had been planted up, anticipating the hedge that was to grow up bordering the field. The Woolmill House had been erected by now, shown with a timber porch to the rear, roughly in the position of the present one. The porch was not shown on the map; had a back door been installed beforehand (which would have been normal for any property of this size in a rural situation by this date) it would have served the kitchen in the single storey wing, and the logical position for it would have been on the garden side of the house, of which there is no evidence. It is conceivable that part of the old cottage had been incorporated within the construction judging from a newspaper article, seemingly around 1902, when there were reports of one of the workmen having broken an arm, and mention of the gable of the old cottage. Confirmation of this might be expected when the harling is

The woolmill site c1910 (courtesy of Graeme Stewart)

removed, but there appears to be no evidence of earlier construction in the surviving photographs of the building, which show only the garden elevation. Certainly in the first of the photographs taken of the house taken, around 1910, the construction looks very fresh, as though the property has only just been built. From its appearance it might be reasonable to assume that some repointing was carried out to the cottage at the same time. A fence had been erected to close off the road leading to the mill for the enjoyment of the garden, and this does not appear to be gated for vehicular access. Pedestrian access would still have been encouraged to the shop, however.

Woolmill House in the 1920s (courtesy of Graeme Stewart)

In many respects the new house was an orthodox dwelling of a type springing up across the region, associated often with white collar workers for the distilleries, farm managers' houses, or houses built for estate workers or craftsmen on the larger estates. It is believed that the Carron Estate would have contributed to the cost of erecting the house under the terms of the tenancy, and that the Smiths paid for some of the internal embellishments. Among few concessions to embellishments on the exterior was the decorative fretwork to the dormers, but in all other aspects the appearance of the house is workmanlike. The principal

Front and rear elevations of the Woolmill House

Jessie Smith in front of the Woolmill House in the 1950s

elevation is, unusually, not quite symmetrical around the door to allow for increased area for the living room at the east end of the house, and for the principal bedroom. The internal layout is orthodox, with a central staircase leading to two rooms at each of the floors. A small store is positioned off the staircase set below the coomb ceiling, and each of the bedrooms has the characteristic wall press against the gables.

There is, however, some recognition of what had gone before, with the house adopting the footprint of the earlier dwelling, maintaining the line of

Interior details of the Woolmill House

buildings, picked up by the same alignment in the agricultural steadings. But, more than this, the new house replicates exactly, and with subtlety, the pitch of the roof of the existing cottage, which results in a pitch closer to 50 degrees, whereas most new houses would be built with a pitch of 45 degrees at this time. It had the added advantage of making the rooms within the attic more useable. The single storey section had accommodation at first floor for a maid, but latterly it came to be used by the 'loon', a young helping hand for the farm and the woolmill and, occasionally, this would be a member of the family as Graeme Stewart recalls.

Although the wall surfaces are smeared with a modern dry-dashed cement render, the walls appeared well built, of local stone, probably not dissimilar to that found at the mill. A regional development of the older tradition of sneck harling can be seen on the early photographs, of lining out the masonry coursing and perpends (vertical joints) but the pointing is clearly still lime-based. Window and door openings are formed and treated in exactly the same way as the older properties on the site. Other developments can be witnessed, modifying the earlier traditions of building, and where the roof ridging might have been stone, lead or zinc just ten years previously, here it is of extruded clay tiles. Machine dressed Welsh slates, purplish in colour, but chosen to be more craggy in appearance to be more characteristic of Scots slating, have been laid in regular courses to standardised face widths, whereas before they would have been laid in diminishing courses to reflect the variable nature of the material delivered from the local quarries, or from West Highland sources. To a large extent these changes reflect the ready availability of a wider range of building materials than hitherto, through improvements in transportation, and the widespread adoption of mass production.

The house had four-paned sash and case windows, painted a dark colour, which stood out well against the light colour of the walls from the lime pointing. As the 1928 photographs attest, the woodwork was later repainted a lighter colour, probably white, or off-white, by which time the garden elevation had been largely covered in ivy. The front door is of two leaves, and while similar to that at the shop, there are detailed differences. It has bolection (raised) mouldings and a plain fanlight, and with the replacement of the windows and other original features in the improvements carried out by the after Winnie Stewart vacated the house in 1992, it is now one of the few original features to be found on the exterior of the building.

Internally, while there is much that can be regarded as being standard throughout the house, with the exception of the kitchen and bathroom which have been refurbished, all of the rooms are close to their original condition, with characteristic features of plain moulded cornices run *in situ*, plain vertical linings to window reveals, four panelled varnished doors and plain moulded skirtings. The features that lift the quality of the interior are the cast-iron fireplace inserts, grates and fenders, and the range of period ceramic tiles and bricks and hearths. There are good plain fireplace surrounds to the bedrooms, while the fireplace to the living room, at the east end of the house, has elaborate beaded pilasters and attractive ceramic tiles to the fire surround and hearth. The staircase is of generous proportions, with barley-twist balusters interspersed with the more usual decorative castings. Varnished woodwork at first floor and throughout the stair enclosure has survived without change.

While the well-intentioned changes that have been made to the fabric with the purpose of improving it have been undoubtedly detrimental, it would be possible to return the appearance of the house back to how it looked before the changes were made in the early 1990s, thereby regaining some

Living room fireplace

of its significance. A long list of matters considered to be detrimental to the significance of the property is given under DS01-54 on pages 74-77. As the photographs show, clearly the house, and its garden, had been a source of great pride to James and Emma Smith, not least when they entertained important guests such as Mr and Mrs Adam Laidlaw, of Laidlaw's of Keith, at the time of their visit in 1928. It continued to be occupied by descendants of the mill family until as late as 1992, and as such it is an important component of the history of the site, and key to its future development.

4.4 The shop

The shop gable on the approach to the mill

In many respects the shop, the first of the structures to be encountered upon entering the site, would have given the most public indication of the fact that textile production on the site was well established, and a reflection of confidence in the future. Probably it represents the high point in the productivity of the mill, setting aside the abnormal effect of the large repeat orders for the production of blankets during World War I. Judging by the price list for the mill in 1931 (page 25) much of the trade relied on personal contact as with those supplying raw materials to the mill as those commissioning, or purchasing cloth from it, and there would be the usual rounds of visitations from manufacturers' agents and from travellers. The

shop may have been less of an opportunity to display the ranges of material produced at the mill, as much as it had been an office for despatching orders, in addition to welcoming those onto the site. A large painted signboard carrying the name of the business had been fixed prominently above the shop window (see page 48). It was intended to be read at a distance from the elevated public roads to the north of the site, at a time when the vegetation was controlled, and when the site was much more exposed to view compared with how it appears now. It would have replaced the hanging sign fixed to the timber cladding on the approach to the mill entrance door, of which only the bracket remains.

Detail of the shopfront

Internal lobby

Elevation of the shop facing the former road

From later photographs it might be assumed that the shop was used for finishing off cloth by hand with some of the more portable machinery on the site, for which the large shop window (fitted with roller blinds) would have been appropriate to provide good natural lighting. An additional window was provided on the southeast wall, fashionably of sashes of unequal sizes, each with two panes of glass, which would have allowed a view of the road from the position of the desk and to gauge who, exactly, might be approaching. We cannot know if the shop was staffed permanently, whether it fulfilled the occasional uses referred to above, or whether it had been set up primarily for casual customers. By all accounts trade would have been busier when the owners of the local estates arrived in the area, when they would have been resident mostly for the months of August and September. Contemporary photographs of the mill show the effects of the industrialisation of the process, with the mill workers in dirty overalls, and fitters standing by with engineering hammers (page 22). It could not have been an environment conducive to conducting business.

The structure uses the same construction techniques utilised for the steadings and the timber extensions to the mill, of a lightweight timber frame resting on a wallplate set over a dwarf wall, clad externally in vertical timber boarding. Here the techniques and the finishes are much less utilitarian – presumably, the rough concrete dwarf wall would have been rendered originally where exposed above ground – and the detailing of the timber cladding has been carefully thought through with regular board widths with cover battens meeting a batten at the head of the wall. On the principal elevation facing the former road and garden, the board widths are centred with precision on the openings for the shop window and the front door, while the lining around the door frame has a neat beaded edge. The front door is of two leaves, with two panels per leaf, raised bolection

Interior of the shop

mouldings and a beaded meeting stile, in all very similar to the front door to the Woolmill House, but subtly different in detail. The original ironmongery is still intact. The doors and windows appear to have been painted the usual estate crimson red, but the timber boarding had received a smart contrasting finish of what could have been either a light grey or cream. Whatever the colour (it is badly faded), it had a greenish tinge. The roof is finished in slate, set out in regular courses, and appears to match the slating on the roof of the adjoining house except that the roof pitch is lower. Corrugated iron would not have been appropriate here.

The carbide gas shed to the rear of the shop

As noted above, it is thought that the shop would have preceded the building of the Woolmill House, and it appears on the 2nd Edition map with the road still on the garden side of the building. With the track transferred to the rear after the building of the Woolmill House the question is begged as to whether the shop building might have been re-orientated so as to have been more obvious to those approaching the site, and in order to preserve the privacy of the gardens which obviously was being sought after in the new arrangement.

The map does not appear to show the small gas carbide shed to the rear wall that must have been a later addition. It may have coincided with the installation of a similar gas lighting system to the mill. The enclosure is clad in corrugated iron sheeting to both walls and roof, and the gas carbide plant and pipework remains in position, although the door to the enclosure has been lost. Remnants of the gas lighting system can still be seen in the interior of the building, although hanging from the ceiling appears to be a pendant chain supporting a shade for an oil lamp.

Presumably during opening hours the outer doors would have been left open, as the inner door was fitted with obscured glass, and the outer face of it had a polished brass plaque to remind visitors that they had arrived at the right mill, in case they were still unsure! Once inside it is an evocative space, as it must have been always. Most of the fittings are still intact, with high level varnished shelves supported on pressed steel brackets, while the wall and ceiling linings are lined in v-jointed boards retaining the original varnished finish.

This fragile structure is currently in poor repair, with many of the external cladding boards missing.

4.5 The agricultural structures

The structures associated with the working of the land at the woolmill site are evaluated in the detailed study undertaken by Ross Noble, and reference should be made to the document that accompanies this

conservation plan. For the sake of ensuring that these structures and what they represent is not lost, or subordinated, the statements of significance prepared for them are incorporated within Section 5.

Detail of window and ventilator to the steading

In architectural terms the buildings make an important contribution to the setting of the woolmill, while in construction terms they are undeniably a part of a continuing tradition of which there is a remarkable consistency with the other lightweight structures around the site. It is no accident of planning that the buildings are in the same alignment as the former cottages, even if the gable of the earliest of the steadings is offset in relation to them, and that the shop and Woolmill House, which followed, reinforced the same linear form. There is evidence that construction elements from the steadings, once declared redundant to their original purpose, have been recycled elsewhere around the site in the time-honoured tradition of making do with what was available rather than paying out for new items, other than when the use of the limited capital available for improvements was unavoidable. This represented a way of life in the Northeast of Scotland, most closely related to the traditions of upland farming where livings were never other than marginal, which was carried across into the way in which the woolmill was run, and managed. It was a tradition that continued until the use of the land for farming ceased in the late 1970s, and the interdependency of the activities by which the site survived for so long is exemplified in the observations made by Graeme Stewart to the author, when he stated 'Towards the end of his time, my Father increased his herd to 5 when the Mill trade declined' [82].

4.6 The site and mill setting

The woolmill site in c1910 (courtesy of Graeme Stewart)

JM Grant's watercolours, taken together with the earliest photographs looking down onto the site, confirm the extent to which the landscape has changed around the mill, most noticeably during the second half of the twentieth century. The picturesque setting of the mill governed by the meandering of the burn through the flat meadows, brought out so lovingly in these tiny watercolours is, paradoxically, much less easy to see now than it was then. The site is much more enclosed than hitherto with the growth of the trees on the bank to the immediate south of the site on the land marked 'Bogroy' on the maps, and with the unchecked growth of the trees on the banks of the burn. Just as the face of the landscape has changed through the abandonment of agricultural practices on the site, so have modern attitudes to land management altered from what they were. The picturesque character of the countryside may be perceived currently by attitudes of cultivating wild landscape, allowing nature to take its course, with the associated benefits to wildlife.

An understanding of the importance of the setting of the mill can only be heightened by realising that it formed part of a wider historic landscape, of which some of the key elements are no longer so easy to recognise. The position of the mill was determined by the need to be adjacent to a reliable water source for the washing of the fleeces and the dyeing and waulking of the cloth, and also by the proximity of the site to the established district roads, about which the writers of the narratives for the Statistical Accounts became so exercised over their condition. The requirements to harness the water power followed later but, as opposed to sites like New Lanark, it was not the primary reason for locating the mill here. Indeed, in Section 4.1 it is argued that the conversion to water power could not be achieved in the most rational way.

The woolmill site viewed from the weir to the lade

Differences between the 1st and 2nd Edition maps (pages 27 and 36) show that the relationship of the site with the network of district roads changed when the new bridge was built downstream of the old bridge crossing the burn, altered the way in which the mill site was approached. It extended the length of the track (the first part of which corresponds to the old road), resulting in a much less satisfactory junction at the point of entry that must have been particularly difficult for laden horse-drawn vehicles to negotiate. The old bridge abutments remain, but they are no longer so easy to make out than they were. The importance of the drive leading into the site had been recognised as late as the mid-twentieth century when, it is understood, the single bar iron fence was installed, probably a proprietary system. It is currently in a dilapidated state, with many of the posts falling outwards towards the burn. With the rebuilding of the bridge, the road was realigned further up the bank, thereby cutting out the spur behind Willowbank cottage, after which the path up to the main road from across the bridge at the mill had to be realigned.

The pedestrian bridge was an important landscape element, connecting the site both physically, and spiritually, with the fragmented community at

The single bar fence on the driveway into the site

Knockando, of which the mill owners and their families were part. Without these links being restored, and with changes in land management in relation to controlling the vegetation on the banks of the public road, the mill will remain substantially hidden from view, and therefore detached. In his early watercolour (page 30) the artist depicts an attractive bridge crossing the burn as a single span, but this bridge must have been replaced with the concrete structure with the central abutment that contributed to the extensive damage to the weaving shed during the 1948 flood. The repairs undertaken thereafter were utilitarian, and the walls of concrete at the edge of the burn, together with the reversion to a single span bridge of steel, of which only the girders remain now, only served to despoil what we know to have been once an attractive rural scene. With sensitivity, it should be possible to regain something of what has been lost. Arguably, one of the best places in which to view the mill in its setting is from the west, in the location where the mill dam was located.

Detail of the tenterhooks

Mill from the west with the tenter frame on the northern edge of the field

The frame in use in the 1950s (courtesy of Graeme Stewart)

The surviving tenter frame within the field has long been regarded as an important reminder of the production process, and of the premium that was attached within the industry to 'summer dried' blankets. Although the iron main frames remain, much less survives of the more vulnerable timber rails with their highly distinctive tenter hooks on which to stretch the cloth.

The enjoyment of the garden on the enclosed falling ground towards the burn had been an aspiration that had begun long before the Woolmill House was erected, as the earlier Ordnance Survey map indicates. What we cannot know is the extent to which this had been laid out as allotments, or as a garden, but a combination of both seems likely. Two parallel paths are shown leading from the road to the front of the cottages. The garden was clearly reworked extensively after the Woolmill House was erected in the early years of the twentieth century, when a more elaborate series of paths were laid down. The garden appears to have been quartered, with beds given over to domestic produce – cabbages and potato beds are visible in one of the photographs at the east end of the enclosure, whereas

Metal railings and gates to the private gardens

The cypress tree today (there were two originally)

in later years the need for self-sufficiency may have receded, and more of the garden was given over to shrubs and flowers. The lower part of the garden had been laid out as lawns at one stage.

From the early twentieth century the road to the front of the cottages was fenced off, initially with chestnut paling or similar fencing, and later with more elaborate fencing and gates made out of angle iron, bent into shape over a former, with decorative white painted spears projecting above the top bars. These were commissioned of the local blacksmith. The trees planted in the early years of the twentieth century matured; the most prominent of them now are the grouping of the cypress, sycamore, and the horse chestnut with its broad and dense canopy, providing a setting for the backdrop of the waterwheel. A late photograph of the site, taken in the 1970s, shows that the garden was still being enjoyed, and a garden seat painted white, is positioned below the cypress, angled to look over the garden towards the burn. The cast-iron rustic bench seen in front of the house in the photograph taken with the Laidlaws was still in position at this stage (page 73).

Relics of the later phases of the garden are strewn around the site. There are two galvanised wire rose arches, and the remains of a summer house can be seen at the bottom of the plot. This had seemingly been created for the adopted daughter of James and Emma Smith who, it is understood, had died from tuberculosis in 1921 at the early age of sixteen [83].

Another important feature of the site associated with the dwellings, appearing on the early photographs, is the henhouse located within the enclosure at the end of the stand of Scots pines beyond the shop. It is highly deserving of preservation in a scene that was of considerable diversity and richness in its simplicity.

The setting of the mill is just as fragile as so many other elements identified on this unique site. It must not, at any cost, be destroyed inadvertently, and the case for resetting the mill within an earlier, known, historic landscape should be pursued.

The henhouse

The woolmill site in January 2006 – compare with the historic views shown on pages 40 and 48)

5 Statements of Significance

> An estate might have an occasional specialised weaver and a smith, living partly from their own calling and partly from a holding of land and some animals [84]

> Scottish spinning and weaving began as low-skill crafts using poor-quality materials in a poor country, under-capitalised and overpowered by a stronger neighbour. After industrialization they competed in a fierce market by lowering prices and quality, only to succumb to foreign competitors.
> But in modern times they compete on quality and skill and have managed to acquire and maintain a niche in world markets, their suitings and their tweeds in demand by the most prestigious tailoring establishments. [85]

> Knockando is noted too for its woollen mill whose machinery dates back to the nineteenth century; some of it, operated now by a Londoner, is the oldest working machinery of its kind in the country. You can see the whole process from the carding of the raw wool to the weaving of the tweed – an exciting working museum which is proving to be highly profitable. [86]

> It is in its own way a jewel, a miniature of the massive woollen mills that drove out of business so many of its contemporaries, and thoroughly deserves sensitive and careful restoration so that it can survive as a reminder to future generations of an important component of Scottish rural life and society. [87]

> Sometimes, by contrast, a building is important because its original contents are preserved and it is still used for its original purpose. Knockando Wool Mill in Morayshire, for example, is full of nineteenth century machinery for textile manufacture, all in working order and in regular use. Clearly the priority here is to conserve the building so that the mill can continue working, as well as restoring other notable features, such as the nineteenth century water wheel. [88]

5.1 Preamble

The above extracts from statements made by others confirm that the subject of this conservation plan is manifested in a historic environment of considerable complexity, for which, and for the purposes of this section, an over-simplified approach to its classification may not be justified. For instance, all of the items listed in this section cannot be deemed to be of ***equal*** significance, and an established methodology is used here similar to that advocated by James Semple Kerr in his pioneering work of 1982 [89] in using a hierarchical system of evaluation. Accordingly the classifications of I, II and III are used, equivalent to his definitions of ***exceptional, considerable,*** and ***some significance*** respectively. His fourth category, of ***little significance,*** is avoided, and what is considered more relevant to the Knockando Woolmill, the ancillary buildings, their contents and the site is the introduction of a category ***detrimental to significance*** on the basis that items listed here can be considered further when drafting the conservation policies.

The hierarchical system selected assumes that the categories of significance relate to a wider model of establishing relative values, which brings into focus the considerations of what may constitute international, regional or local significance.

The Burra Charter [90] requires assessments to be made of various values of significance in topical groupings, defined as ***Aesthetic, Historic, Scientific*** and ***Social.*** For evaluations to be made of the various aspects of significance these categories have been subdivided further into recognisable components under the headings of ***Historic, Sociological/ethnological, Industrial/textile production, Architectural and constructional, Agricultural, Site and setting*** and ***Ecological.***

While the list has been prepared to be as inclusive as possible, the absence of any item from should not be construed to mean that it may not be of significance. Accordingly, the Knockando Woolmill, its equipment, the ancillary buildings and their fittings and contents, and its site and setting, are considered to be of significance for the following reasons. A summarised narrative version is incorporated within Section 1, the Preamble to the conservation plan.

5.2 Statements of Significance

Historical

SS01 The woolmill reflects, at least in part, the **geographical remoteness** of the area and the survival of **traditional rural life and craft skills** in the Northeast of Scotland longer than elsewhere in Scotland I

SS02 The sense of geographical isolation had been reinforced historically by the relatively **poor communications and transport infrastructure**, which finds expression in the way that the site has evolved, and a **dependence upon local sustainability** I

SS03 The site embodies, at a small scale, **the logical conclusions of the principal components of the industrial revolution**, and the central position of the textile industry within it – of machinery and specialised equipment to mechanise the production processes; the ready **availability of power** (here, through harnessing water); **materials** (wool), and **improved transportation** (roads and rail links) I

SS04 The woolmill is **still in use for the original purposes** for which the site had been developed, and demonstrates **an unbroken tradition of textile production** extending for approximately 225 years**; in terms of industrial archaeology this is rare** I

SS05 It reflects with historical accuracy the enhanced role played by **artisans and tenants from c1785** in the textile industry, and the **influence of the Board of Trustees for the Improvement of Manufactures**; hitherto there had been over-supply within the industry and a lack of profitability within it I

SS06 Ultimately this led to rising wages for handloom weavers, and the potential for investment in power weaving even at a small scale from the mid-nineteenth century onwards; in this is reflected the dominance of textiles over other industries, and from the early days the fact that **this was primarily a rural industry, of which the woolmill, within this setting, is a very rare survival** I

SS07 While the major innovations in commercial weaving were led by the Scottish Borders, Knockando Woolmill shares with Elgin, Forres and Keith **the development of a regional textile industry in Moray and Banffshire**, which reflects accurately the availability of full mechanisation by 1830, and power weaving by 1850 I

SS08 Where it differs is in the scale of the production; where the mills in the local towns grew, Knockando remained a **'district mill' continuing to serve the rural community in which it had been grounded** I

SS09 The growth of the textile industry in the Northeast of Scotland reflected also **improvements in agriculture**, and in particular animal husbandry and improved breeding in the early nineteenth century leading to **increased wool yields** I

SS10 The site represents one of the outcomes of a **process of land improvement** peculiar to this part of Strathspey during the eighteenth century, when tenants with small landholdings were dispossessed and, with the encouragement of the landowners, **tenant farmers were established to operate at a more profitable level and rural mills were developed** II

Cattle rearing and potato harvesting on the croft (courtesy of Graeme Stewart)

SS11 Uniquely, it represents the **logical conclusion of a tradition** established in Scotland from the early eighteenth century, **of combining the waulk milling of cloth with farming**, of which **all of the elements survive and are still highly recognisable in the archaeology of the site** I

SS12 Taking these historical factors into consideration, and all of the matters listed in the following sections, what is of particular importance is that **the site represents a historic environment of considerable diversity** which is the sum of all of these aspects of significance; it has resulted in **a self-sufficient, wholly sustainable unit even though surviving for the larger part of its existence only at a pure subsistence level** I

SS13 Although operating at a subsistence level, for a relatively short period **from the end of the nineteenth century the site prospered at a level of production** that merited the acquisition of machinery and the expansion of the mill, **reflecting national trends**, later to be **sustained further by the impact of supplying textiles for the war effort** from which evidence can be resurrected from the surviving order books I

SS14 The alignment of the mill cottages, the steadings and byres, and the mill itself, together with the road and water power infrastructure, field systems, ford and footbridge to the village, all indicate that **the site is that of a historic 'miltoun'** II

Sociological/ethnological

SS15 The archaeology of the site and of the surviving structures reflects the **improving status, over time, of the mill tenants within the community they served**, and their own aspirations; when at its height at the turn of the twentieth century these aspirations can be evaluated from the study of pictorial evidence and the appearance of a common 'livery' of external paint colours and signboards of which there remains some evidence II

SS16 The evolution of the site conveys equally the **historic feudal relationship** that existed between the tenants and the

estate, and the fact that investment would have been a shared responsibility III

SS17 **The commercial importance** of the mill is reflected in its **longstanding association with the production of estate tweeds, or district checks** II

SS18 With improvements carried out at the end of the nineteenth century came the **reorganisation of the site** to distinguish between the **production activities** – of textiles and of agriculture – and the **privacy of the family** residences, finding expression in the reorganisation of the roadways, private gardens laid out formally, and railings and gates to distinguish between the public and private domains III

SS19 The site represents a **long tradition of craft skills** being passed on through generations of the few families involved in the running of the mill, and inherited by the present weaver; **this represents a legacy of immense importance** I

SS20 Until 1976 descendants of the families operating the mill had been involved in **an unbroken succession of textile production for almost two centuries**; that long tradition of association continues in the present charitable trust II

SS21 With the exception of the erection of the new house and the shop at the end of the nineteenth century (at a time of relative prosperity) the establishment represents **an astonishing tradition of acquiring second-hand machinery and recycling elements of construction across the whole of the site**; as such it is archaeologically very rich but, more importantly, **it reflects a rural tradition of subsistence farming and weaving in a remote location within the British Isles, in a way that was, for many years, truly sustainable** I

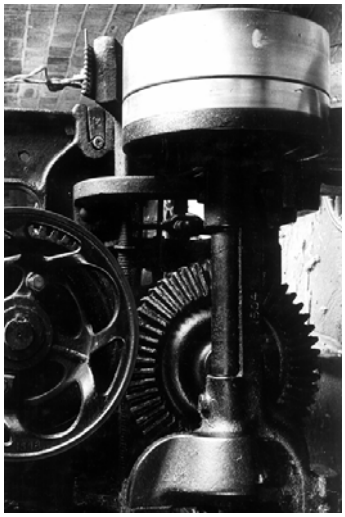
SS22 The standard of finishes to the new house is a clear indication of the **improved social standing of the family**, as is the reorganisation of the surviving adjoining cottage to create a more homely dwelling III

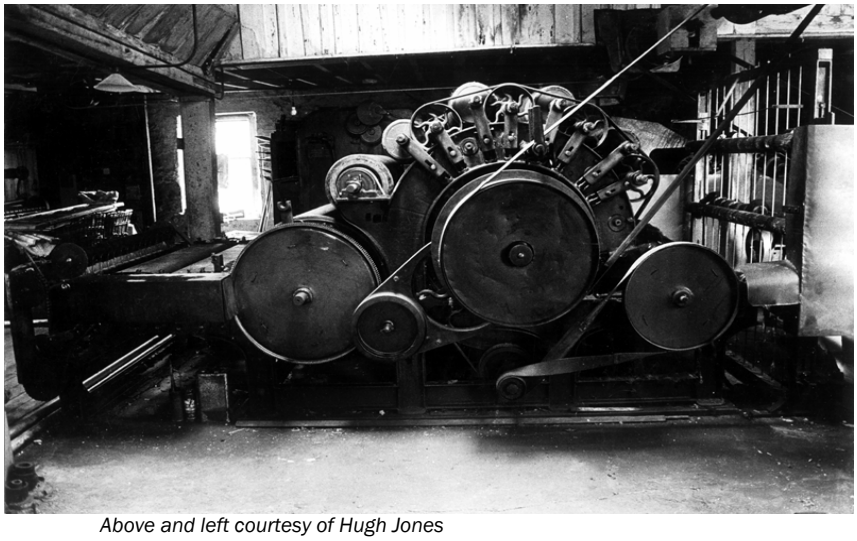
SS23 Our knowledge of the site is enriched by an **oral and written history** of how it was run, and who lived and worked there II

SS24 From this, and other evidence, it is possible to build up **a picture of the network of associations of a rural mill** – of the

relationship with the local community, of bartering and trading, and of mutual support through associations established with other mill owners II

Industrial/Textile production





Above and left courtesy of Hugh Jones

SS25 Important as it is, surviving as a 'district mill' (SS08), **the site is of considerable importance as a rare survival of a 'vertical mill'** – one in which the **entire process from raw material through to finished cloth** had been embraced and which has the potential to restore the functions of teasing, carding, spinning, weaving and waulking/fulling on the same site, whereas traditionally some, or all, of these activities may have been segregated; although some of the original functions are no longer incorporated, **most of the equipment still survives, and is capable of being restored to operation** I

SS26 In this **the mill has considerable rarity**; it is one of **very few mills to remain in production on its original site**, still producing commercial cloth of high quality and it has, therefore, **international** significance I

SS27 It **predates the one known comparable small rural mill still in commercial production in Scotland**, at Bridgend on Islay, with which it shares the distinction of continuing to provide cloth of very high quality produced on traditional looms that cannot be provided on high-productivity modern machinery I

SS28 It represents the **last of the documented mills on the Knockando Burn** relying on water power III

SS29 The **water power system**, including the head dam and weir and overland lade (unusually - a large diameter salt-glazed ware pipe), penstock, wheel, wheelpit and tailrace **is very substantially intact**, and notable for the somewhat convoluted manner in which the water is supplied to the overshot wheel, understood to have been reused from a local mealmill in the latter part of the nineteenth century; the **cast-iron 14 ft diameter 8-spoked wheel**, although devoid of floats, **is a good example of its type** and capable of being restored II

SS30 The **surviving machinery** within the mill, most of which is of nineteenth century origin, **is of immense significance** in terms of **industrial archaeology**, and is either in use, or capable of being restored to full working order; its significance was such that it was statutorily listed before even the significance of the mill buildings was recognised I

SS31 **Particularly rare** are the following

- **The teasel raising machine**, essential for the primary trade of finishing cloth for blankets
- **The carding set** of 1870/1872 having all original wooden swifts (rollers), while the ball and bank feed is particularly rare
- **The 1870 Platt spinning mule** is complete and original in all of its parts, purpose-built for the space created by extending the workshop; i**t is probably the oldest surviving spinning mule in its original setting in Scotland**
- **The wool blender** within the attic, which appears to be of a very early pattern, in iron and timber I

SS32 The following are also of **significance**

- **The Dobcross framed power looms** of 1896 (currently disused) and 1899, of the earliest 'drop-box' pattern
- **The twisting and hanking frames** in the attic, confirming local production of knitting yarn, considered to be of importance within the local economy
- **The 'stake' warping frame** within the attic, an exact replica of a pattern that had to be replaced in 1976
- **The automatic feed to the carding set**, of 1919, associated with the final phase of the mechanisation of the mill and the reduction of manpower I

SS33 The **internal power gearing and line shafting** is all **original and functioning**, there is good evidence throughout the mill of where earlier systems had been installed serving machinery now dismantled or relocated II

SS34 The mill provides firm evidence of its evolution through at least three phases of development; the building envelope has been extended primarily to suit the acquisition of new, or second-hand, improved textile machinery while the **progressive industrialisation of the site which took precedence over the quality of the construction,** which was never more than rudimentary I

SS35 **The tenter frame** within the field to the immediate west of the mill is a **rare survivor of the textile process**, and, although dilapidated, retains evidence of how it had been once used I

SS36 The remnants of the **carbide gas supply** to the shop within the dedicated shed to the rear, together with the surviving **pipework and fittings**, are important survivors of a once common proprietary system; equally the mill had been lit by gas, although the shed housing the gas supply has been demolished II

SS37 The timber-framed **corrugated iron clad winter drying shed** above the mill is an **important survivor** of the textile production; although dilapidated it has remnants of the original boiler system and tenters upon which the cloth was hung I

SS38 **The vestiges of a former signboard** at the original approach to the mill provides a reminder of the early activity on the site, when the selling and ordering of the product would have been conducted from within the mill before the erection of the shop in the late nineteenth century II

SS39 The site reflects clearly the **evolution of the textile production process** from one of relatively **low technology to a fully mechanised system,** initially from **low quality materials to a high quality product** by which the mill has shown the potential for commercial survival I

SS40 **Hand operated machinery**, associated with the finishing processes of the textiles, is of some antiquity and may be constituted as **portable heritage** which, with the machinery of the mill taken as a whole, renders it of **some significance** II

Architectural/Constructional - General

SS41 Variations in construction materials across the site reflect **regional vernacular traditions** and, equally, **the availability of materials** as transportation to the area improved by road and rail II

SS42 Not infrequently materials, some of them proprietary, were utilitarian and chosen primarily to ensure that the **structure of the mill and the wall and roof claddings** were as **economic** as possible I

SS43 The whole of the site, with the exception of the house and the shop, is notable for the degree of **ingenuity by which the recycling of architectural elements** has been carried out; windows, doors and door ironmongery (mostly fitted upside-down) have been reused, seemingly occasionally from

material borrowed from other sites and adapted to suit, a tradition that has continued right up to the present time I

SS44 **Vernacular construction techniques** used across the site (with the exception once more of the house) are **rudimentary** (for instance angled reveals to windows without rebates for sash boxes, a feature that appears in the work of the early nineteenth century); the same detail emerges once more in the work of c1870 II

SS45 It is a **treasure house of vernacular building techniques fused with novel**, relatively **untried construction** II

SS46 The masonry walls of the mill (and, originally of the house) are **good examples of** the Northeast tradition of **sneck harling** (a technique of lime pointing that covers the bulk of the face of the stones of the wall, leaving only the larger stones exposed) III

SS47 The walls of the old cottage, and of the concrete weaving shed, are finished in a **thin coat traditional lime harl**, much of which remains, and **throws light on past constructional techniques** II

SS48 The adoption of **mass concrete construction** appearing in dwarf walls (to receive timber framed structures) across the site, and the shuttered mass concrete walls of the weaving shed is **relatively unusual** for this area of the Northeast of Scotland at this time due to the ready availability of building masonry; while experimental, it was suited to thin wall construction, and consistent with other construction on the site suggests that **the driving consideration had been financial** II

SS49 The general approach to repairs throughout the life of the mill, and particularly in recent years, has been that of **minimal intervention** thus preserving original fabric rather than destroying it; while driven by the requirement to effect economies the approach has **added considerably to the significance of the site**, and our appreciation of it I

SS50 The proprietary profiled **corrugated galvanised sheets with integral rooflights** (appearing in the agricultural sheds and to the roof of the west extension to the mill) are of **limited significance** in that they are relatively unusual and scarce III

SS51 Surviving evidence of **historic paint colours** – primarily crimson to joinery and cream to the more significant timber structures is **of importance in its consistency**, and in reflecting what may have been estate colours II

SS52 In relative terms, the sophistication and quality of construction of the mill house and shop are in sharp contrast to the **rudimentary construction techniques adopted for the mill**, where **the investment had been focused primarily upon the machinery** II

Architectural/Constructional – Mill and outbuildings

SS53 The use of the original roof finish to the mill, of **asphaltic pitch,** surviving below the overcladding of corrugated iron is

highly unusual for a large roof area, and devised no doubt for cheapness and to reduce the loading on a lightweight roof structure which is accordingly of a relatively low pitch; the material is **a very early example of a finish that was patented in the 1860s**, and it is of particular interest in that the asphalt layer appears to have been **strengthened through the addition of oat straw** I

SS54 The construction of the mill reflects a tradition of **nineteenth century vernacular construction for Scottish small-scale workshop buildings**, often borrowing from the construction of agricultural buildings using **low status materials mostly available locally** – of timber frame with vertical board-on-board cladding and, later, with roofs and walls of corrugated iron; for the mill structures the overall appearance is rustic, and this is **a rare example of this building type** I

SS55 As a consequence of the tendency for **adding to the structure** over time **in a seemingly unplanned manner** the building has a particular, **unique charm** I

SS56 Undoubtedly this charm is heightened by **the imperfections of line and of surface planes** resulting from wear, decay, and constant movement over time which gives the structure **a unique character** that visitors to the mill find always to be captivating I

SS57 The **industrial 48-pane lights to the workshop** are of **particular interest** in that they have been reused from the earliest structure on the site, and hold **important historic glass** II

SS58 The mill is of interest in that it shows **rare evidence** of the products of a **local clay and tile industry**; bricks may have come from the tileworks at Craigellachie, while the pantiles fitted originally to the roof of the west extension to the mill is an unusual choice of material for Strathspey, particularly in the light of the availability of roofing slates from the quarries near Tomintoul; that the tiles are stored on site is of value II

SS59 **The 'patina' of present and past use** – the build-up of wool oil on the working floor of the attic; the wear on the treads and the highly polished handrail of the steep stair leading to the attic; the pervading smells of wool and lubricating oil; and the stains deposited from the constant oiling of the machinery and drive trains, are all **highly evocative reminders** encountered upon entering the mill providing **an unforgettable sense of place and historic associations** I

SS60 The **propping of the structure** where it has failed or where strengthening is required to support the weight of machinery, some of which is historic, is of some significance III

SS61 The **old pattern cast-iron skylights** fitted with overlapping glass sheets are important survivals II

SS62 The **surviving colour scheme** – of limewashed walls in the work areas; pink and green to the principal structural

members of the workshop; and green to signify guards to the working parts of the machinery **is of historic importance and adds to the character of the mill** II

SS63 The **detached timber WC shed** with the roof clad in zinc sheet is detailed with some sophistication and retains the original WC and cistern, and other fittings II

SS64 The **rebuilding of the gable of the weaving shed** lost in the winter flood of 1948 represents an honest repair carried out at a time of austerity in the postwar period, and reflects **an event**, not unlike the great Moray Flood of 1829 from which the Knockando Burn was not exempt, which has entered into the **national conscience** III

SS65 The boiler and heating pipework installed to the fireplace opening provided an **early heating system** for the workshop, associated with the addition of the weaving shed II

SS66 **Surviving fittings** – such as frames for dismantled machinery and drivetrains, and the order desk in the workshop (probably resited from elsewhere in the mill) are **important archaeologically**, reflecting past uses I

Architectural/Constructional – Cottage

SS67 **The cottage** is the **oldest surviving structure on the site**, and has associations with the earliest tenants involved in the working of the site and with textile production II

SS68 It is a more complex structure than it may at first appear, revealing changes that have reflected the evolution of the site and, with that, the **improving status of the tenants** II

SS69 It is of **archaeological importance**, retaining evidence of earlier layouts and uses, and of a roof structure that had been open originally with smoke-blackened timbers, constructed for a **thatched finish** which survived well into the twentieth century, and for which evidence can still be found on site II

SS70 The boarding out of the ceiling and walls is symptomatic of the desire for **improved conditions of habitation**, and is likely to equate to the end of the nineteenth century; accordingly the **successive wallpaper finishes are of importance** as evidence of past habitation and achieving improved levels of comfort II

SS71 The **quality of the joinerwork** of the original windows of the north elevation and the principal internal doors – though basic – **is unexpectedly high**, and presupposes that the tenants and weavers were not devoid of aspirations and possessed **personal pride within their own community** II

SS72 The cottage is inherently **well-proportioned**, and on the garden side, with the exception of the roofing that has been replaced, it retains virtually all of its original appearance; it is a **good example of local vernacular construction** II

SS73 The **surviving chamber** on the gable of the cottage **is important** both in terms of its purpose, as a **dairy and**

(probably) **larder**, and for its construction, for which the roof had been of rudimentary construction of local flagstones; it retains some of the original fittings II

SS74 The **surviving decorative schemes are of interest**, in particular the grey and white/cream finish to the joinerwork, and the pink distemper finish to the plastered walls of the sitting room II

SS75 The **surviving interior woodwork**, and in particular the unusually slim fielded 6-panelled doors to the principal rooms, **is of interest**; although the doors have been repositioned they are good examples of **country joinery of the early nineteenth century** II

SS76 The **stove and fireplace surround within the former kitchen** are **of some importance**, as is the simple late nineteenth century **fireplace and surround to the sitting room** II

Architectural/Constructional – Woolmill House

SS77 The family house is a **good example of a fairly unexceptional type of dwelling of traditional construction** which is commonplace in the Northeast of Scotland; its significance is that it **forms part of the grouping**, and follows the linear pattern of the cottage it replaced, paying deference to the earlier cottage alongside through consciously replicating the roof pitch which is steeper than it would have been otherwise III

SS78 **The house**, of one-and-a-half storeys, **is basically well-proportioned**, and one of the few concessions to the embellishment of the external fabric appears in the fretwork to the dormer windows III

SS79 Internally the **house is distinguished for the following features** which have survived in their original form

- **Cast-iron fireplaces**, complete with grates and good timber surrounds
- **Good late Victorian glazed tiles** to hearths and around fireplaces
- **Varnished woodwork**, including panelled doors
- Surviving hat and coat belting (rail)
- **Plaster cornices of varying profiles** to the principal ground floor spaces
- **Cast-iron balusters and hardwood handrail** to the stair III

SS80 Taken collectively, the house combines the **obligations of the estate** as feudal superior in supporting its construction with the **aspirations of the tenants** in embellishing it, as **further evidence of their social standing within the local community**; with this investment the mill had become recognised as a **focus for providing local employment** II

SS81 Still surviving above the kitchen in the annex is a **maid's room**, again confirming the improved social status of the mill owners; latterly this was used as accommodation for an agricultural labourer, for which it was known as the 'loon's room' III

Architectural/Constructional - Shop

SS82 The **timber framed and clad shop and office is a rare survival of a purpose made rural unit** which, although dilapidated, is largely intact; its particular associations are with the mill at a time of heightened production and trading, for which its **location at the point of entry into the site is of importance** II

SS83 The **interior fittings are**, in most respects also intact; **of importance** are

- **Shelves and shelf brackets**
- **Varnished timber linings** to walls and ceiling
- **Surviving gas fittings** and pipework
- **Window blinds**
- **Inner glazed door**, etched glass and original ironmongery

II

SS84 Remnants of the **external colour scheme** are **of importance**, suggesting confidence in the retail trade of the mill; with its **signboard** (now lost) mounted above the shop window it would have looked impressive upon entering the site II

SS85 The **shed** to the rear **housing the carbide gas plant** is of **some importance**, suggesting the desire of the mill operators to be seen to be **responsive to the latest technology** II

Agricultural

SS86-110 have been prepared by Ross Noble and are extracted from his report

SS86 **Farming has been an integral part of the social and economic life of the mill since its inception in c.1780.** The land associated with the mill (c.25 acres) is held as an **agricultural tenancy from the local estate**. The woolmill still sits within the land of that agricultural tenancy today. The boundaries of that farm tenancy **have remained essentially the same for over 200 years** I

SS87 The land holding straddles the Knockando burn, making the ford, just east of the miltoun, an essential access route for both livestock and farm vehicles. **The ford is still a significant feature in the landscape today** II

SS88 Field boundaries are marked by a **variety of fencing materials**, some of which come from the local blacksmith, **showing the interdependency of such rural communities** III

SS89 There is evidence on site, together with photographic records and oral testimony, that the **fields were regularly subdivided into smaller strips.** Each of these strips would grow a different crop. **Such practice is indicative of the primarily subsistence nature of the farming system** II

SS90 **The steading is the main indicator on site of the significance of small-scale cattle rearing as a factor in the economics of the woolmill operation** I

Courtesy of Graeme Stewart

SS91 The earliest part of the existing steading dates to the 1870s, although the OS map of 1870 does show an earlier smaller building on a nearby site. **The steading is a timber-clad building of a post and sill beam construction, which sits on a dwarf wall of mass concrete**. This construction method dates back to the later medieval period, and a similar building was archaeologically dismantled in Grantown on Spey in the 1990s. The latter building had clay infill between the posts I

SS92 The steading has 4 chambers plus **a hay loft over the two easterly sections, accessed through a high level door on the east gable. The loft is partially open at its west end, allowing hay to be fed directly into the animal housing.** Above the hayloft door is **a "doo hole", allowing pigeons to be reared for food** in the loft III

SS93 The most easterly chamber was originally **the gig shed**, housing **the main mode of transport for the mill family.** The gig shed, which was completely open on the north elevation, was later used as a turnip store. Later still the shed was closed in on the north elevation, and **converted for horse stabling**. This is significant in that it reveals a decline in the use of horses, now only used for personal transport II

SS94 Evidence for the conversion to stabling is still present in the form of a **crude harness rack, a set of 4 iron coat hooks (domestic) for hanging harness, a rack with 5 iron spikes above the stalls,** and, most significantly, **two wooden feed troughs** set up on legs and a loose foundation of stones III

SS95 The next chamber has originally been **the barn**. This is entered by a door in the north elevation (now replaced by a recently constructed door). This has probably **used for storing grain and other feedstuff**. The most significant feature in the barn lies **in partition walls**, which are clearly "**off the saw" timber of random widths** III

SS96 The third chamber has been the **stable. Many of its original features remain** or are reflected in how the chamber was **converted for use as a cow byre**. The stable is entered from the south elevation, through a **half-leaf (vertical) door**. The entrance door and the connecting doors to the barn

and byre are all painted crimson and have a **very stylish proprietary latch system**. The door to the barn has been removed, and is in use now in the mill (still with the same latch system) II

SS97 The window in the stable has two glazed panels and below them two sets of slatted boards arranged on the "hit and miss" principle. By adjusting these on a slide a **simple system of ventilation** is provided. A feed access from the hayloft into the stable serves both the stable and cow byre II

SS98 Other stable features are a **wooden feed store box** on the south wall, **a harness board with a cart saddle rack and three collar or breechin racks** on the west wall, and **a tether chain** on the west wall above the stall III

SS99 **The stable has been converted to provide an additional byre for cows**. This suggests **a decline in the use of a working horse** (apart from driving) and the **economic significance of the cattle**. The position of the stalls, and the unusual shape of the dung grip, both features made in concrete, **evidence the original use as a horse stable** II

SS100 The final chamber in the 1870s steading is the **cow byre**. Again it is entered by a **half-leaf (vertical) door, with the same proprietary latch** as the stable. **The ventilation system** in the window on the south wall is identical to the byre**,** but **a larger version of the same sliding "hit and miss" boards are fitted to the west gable** II

SS101 The byre has been modernised, with concrete floor, grip and stalls, but **remains of the wooden feed troughs on the west wall can be seen. A tether bar and chain on the south wall probably predates the renovation.** The byre has a **proprietary rooflight** matching those on the west extension of the mill (SS50) III

SS102 Outside the steading on the south side there is a **cobbled platt** (now buried) mainly for the benefit of horses II

SS103 Beyond the cobbled area the dung midden is clearly delineated by a large stone border. Evidence of urine soakaways from both byre and stable can just be seen III

SS104 To the west and north of this set of steading buildings is a **sawmill**. This appears in photographs from the early 20th century. **The sawbench is wooden, with iron fittings for the rollers and timber feed. The rollers are marked by carpenters' numbering. There is a saw blade still in position**. The timber shed and corrugated metal roof are in a state of collapse. **The significance of the sawmill is high, since it again shows an attempt to diversify and maximise income.** The saw is belt driven, and currently attached to an electric motor housed in a barn which was erected in the mid-20th century I

SS105 To the north and east of the sawmill is another timber and corrugated metal roof. This appears in a photograph dated 1910, **but it may be the earlier steading building which appears on the 1st Edition OS Map**. It appears to have been much altered over the years. There is some remaining

evidence of **a post and sill beam construction.** If this is the original steading then its functions were probably two-fold. The **larger chamber would provide horse stabling,** and the smaller chamber **a poultry house.** There is a poultry hole at the foot of the door II

SS106 The implications of this interpretation are that **until the larger steading was built c1870. The cattle would have shared the space in the two houses on the site**. This would be normal practice in many rural areas until well into the 19th century. **In ethnological terms the cottages would become "longhouses" or "byre-dwellings" and the remaining cottage would have been altered c1870** II

SS107 The area between the original stable/byre and the building noted in SS105 was later roofed over with corrugated metal and utilised as a **cart shed, and later a tractor shed.** This structure has almost totally collapsed III

SS108 In the mid 20th century **a threshing barn was added to the steading. This was bought second-hand from Blacksboat, a neighbouring farm.** It was rebuilt against the west gable of the byre, turning that external gable into a partition wall. **This acquisition follows a pattern in the history of the mill both in buying second equipment and in maximising income.** Until this building was erected, threshing was contracted out to neighbouring farms II

SS109 Associated with the erection of this barn is the purchase of a **threshing mill. This was bought new from a local millwright - Godsman of Aberlour.** The mill was driven by the same power source as the sawmill, most recently an electric motor. The drive belting to both mills survives, but the threshing mill was sold in the 1980s II

SS110 The threshing barn has a grain store, on top of which is a threshing loft with a grain feed in the west gable. However 2 further corrugated metal sheds attached to the west gable makes this system unworkable, and oral evidence suggests that grain was fed to the mill from the barn floor III

Site and setting

SS111 Set by the geomorphology within the valley bottom of the burn, contained by rising ground on both sides, and approached by a track following the line of the burn, **the site is undeniably picturesque**, recognised in the past by its depiction in late nineteenth century watercolours II

SS112 The sense of the 'picturesque' is reinforced by the **ad hoc manner in which the mill and the outbuildings have been extended**, using vernacular construction and forms; the mill structures contrast with the consciously defined linear form of the dwelling houses and of the shop, reinforced by the agricultural structures in all leading to **the creation of a *rural settlement*** which may reflect earlier patterns of occupation on the site I

SS113 The settlement was enhanced by the development of the **private garden** to the north of the dwelling houses extending to the edge of the burn, laid out semi-formally, of

which remnants survive together with plants and features of the garden such as rose arches and the garden room (now collapsed); it acknowledges that **the site would originally have been viewed prominently from the elevated public road** to the north of the site before the vegetation affected the outlook II

The site in 1976 © John Hume, RCAHMS

SS114 The settlement is marked also by **the planting of trees which provide a sense of place** – by the specimen cypress and chestnut within the garden, and the stand of Scots pines on the approach to the site III

SS115 The **footbridge over the burn**, although dismantled, signifies **an important historical link with the village community** II

SS116 The **agricultural field boundaries are of historic importance**, and there are remnants of two types of fencing – the more important is of a **proprietary system of railings** (painted green) demarking the boundary of the road leading into the site, and an indication of the increasing prosperity from the mill operations in the late nineteenth century, and the aspirations of the mill operators II

SS117 The **railings and gates to** define **the private garden** area of the house and cottage **are distinctive, and show an unusual fabrication technique**, replacing earlier timber fencing III

SS118 **The henhouse** and enclosure, located close to the dwelling houses are **important domestic reminders of one aspect of self-sufficiency in rural life in the past** III

Ecological

SS119 The site is **a rare survival**, in that it is representative of a form of **traditional small scale, rural industry in harmony with the natural environment** and with the working of the land, upon which it is dependent for its survival; at a time of increased awareness of the importance of ecology and sustainable development it offers **a model for further study** I

5.3 Detrimental to significance

The following matters are considered to be detrimental to the significance of Knockando Woolmill, its machinery and associated structures, site and setting

The mill and outbuildings

DS01 The generally fragile nature of the structures through water penetration, flood, woodworm infestation excessive floor loadings and general decay with the consequent risk of progressive collapse

DS02 The generally dilapidated state of the outbuildings and their contents, in particular the drying shed and the outside WC

DS03 The overcladding of the principal roof of the mill with the secondary roof clad in corrugated iron

DS04 The redundancy of the water power system and decay to the infrastructure, including the loss of the buckets to the waterwheel

DS05 Temporary repairs in modern materials to cladding and roof drainage systems

DS06 Lack of decorative protection to historic timber cladding and joinerwork

DS07 The loss of the clay tile roofing to the 1870 extension, and substitution of galvanised sheeting without insulation resulting in a condensation risk

DS08 The replacement of the windows to the 1870 extension which do not match the original patterns

DS09 General lack of heating to the historic fabric on a damp site adjacent to a burn, starved of winter sun, and of moisture control

DS10 Structural movement within the masonry structure

DS11 The poor state of the chimneyhead to the 1870 wing

DS12 The poor pedestrian access to the mill, primarily due to the overhead lade pipe structure, albeit that this is historic

The cottage

DS13 The poor state of the asbestos corrugated iron cladding, holed in places with consequential damage to the internal fabric, and loss of the original thatched roofing

DS14 The decaying state of the masonry and harled surfaces, particularly at chimneyheads

DS15 Collapse of the ground floor structure due to site moisture

DS16 The generally poor condition of the internal finishes and joinerwork

DS17 The collapsed roof of flagstones to the dairy enclosure, and the loss of the original door

DS18 Decay from extensive timber infestation, particularly to roof timbers

DS19 Redundancy of use

The Woolmill House

DS20 The introduction of unsightly roof ventilators, disturbance of the coursing pattern and texture of the original roofing slates, loss of the original cast-iron skylights and insertion of modern rooflight windows

DS21 The TV aerial and pole fixed to the east chimneyhead, and surface cables

DS22 Low grade porch added to the rear of the house

DS23 Modern drydash cement finish to the external walls, and associated galvanised arris beads, and the introduction of modern galvanised ventilators

DS24 PVC downpipes

DS25 The loss of the original sash and case windows and substitution with proprietary stained timber double-glazed units

DS26 The staining of external woodwork, which had been painted traditionally

DS27 Precast concrete cill where a new window has been introduced to the rear elevation

DS28 The water penetration affecting the internal finishes at the west gable

DS29 The low standard of finish and poor layouts of the kitchen and the bathroom

DS30 The application of woodchip paper to the interior walls

DS31 Present redundancy of use

The shop

DS32 The generally dilapidated condition of the timber frame and cladding

DS33 Redundancy of use

The agricultural structures and field systems

DS34-45 have been prepared by Ross Noble and have been extracted from his report

DS34 The current lack of a link between the agricultural land and the mill operation

DS35 The absence of any agricultural activity at all

DS36 The extreme dilapidation of the field boundaries

DS37 Exterior damage to the south elevation of the gig shed and the original barn making them both less than watertight

DS38 New replacement wall on the north elevation of the original byre

DS39 The infill of the north elevation of the gig shed by chipboard panel

DS40 The new doors on the north elevation of the 1870s steading are more crudely constructed than those on the south elevation

DS41 Lack of protective paintwork to the timber cladding of the steading

DS42 The collapse of the sawmill roof and a possibly associated shed to the north of the sawmill

DS43 Lack of protection from weather of the saw bench, rollers, timber feed and saw blade

DS44 The excessive use of the steading for ad hoc storage, mainly of mill equipment, which is putting pressure on the fabric of the building

DS45 The accumulation of earth and grass on top of the cobbled platt on the south elevation

DS46 The mobile home stored temporarily on site

DS47 The collapsed state of the railings on the track leading into the site

DS48 The overgrown state of the garden, discarded decorative features and the collapsed garden hut

DS49 The poor condition of the last elements of the structure of the former footbridge

DS50 The poor state of the railings and gate to the private garden

DS51 The enhanced risk of flooding to the site due to climate change

DS52 General redundancy of land uses, other than for the operation of the mill

DS53 Overhead power cables serving the site, and aerial distribution to the various structures of the building grouping

DS54 Damage to the elevated mill lade pipe and bank from invasive vegetation and tree growth

6 Risks to Knockando Woolmill

The foregoing text indicates the full extent of the fragile nature of the state of the surviving fabric in relation to the historic environment of the woolmill site. There is hardly any aspect of it that has not suffered from a lack of investment, and from the ravages of protracted decay from benevolent neglect (which is, in itself, historical) or through redundancy of use, or under-use of spaces and buildings, or even of the surrounding field structures upon which the site was once dependent for its survival. Even the landscaped setting has changed remarkably over time as a result of differing approaches to land management compared with when the mill was at the height of production.

Given the scale of the problems encountered, it is difficult to be able to pinpoint any one area of risk that should be highlighted over and above any other. If, in the scale of things, the Woolmill House might be considered to be in good repair having been refurbished recently, the deficiencies in the work carried out throws up its own problems, and sets a number of fresh conservation challenges.

Apart from the more obvious risks of the total loss of structures through fire, perhaps one of the greatest risks to the site would be as a result of the collapse of any building, and if the already overstressed roofs of the mill were to suffer from the superimposed snow loading during a heavy fall this might only be prevented in the short term by the propping of the structure. Apart from the obvious, and unacceptable risk to those working in the mill, the effect of such a collapse would have devastating effects on the fabric of the buildings but, as importantly, on the machinery, much of which is irreplaceable. Other risks are of a more manageable kind, and can be addressed as part of an integrated conservation management plan for the site, which must include an overall risk management strategy for the duration of the project works, and thereafter. Health and safety will become important issues in terms of allowing public access, and the personal safety of those operating old machinery. Flooding has been a rare problem in the past, and with global climate change, the magnitude of this risk will be set to increase. Fire will be an ever present risk, particularly in

the case of the mill due to the tinder-dry wooden construction; associated risks that may not be foreseen would be damage to the machinery from the cooling effect of water applied during a fire with the unintended consequence of cracking the machinery casings. A holistic approach is required.

It has to be said that some of the risks are much less quantifiable but, unless they are addressed, they could affect the long term sustainability of the site, and hence the long term conservation aims of the project. It can sometimes be forgotten that this is not a museum, and that it will continue as a manufacturing site, for which the craft skills of textile working, of mastering the machinery, and repairing it, will take on a particular significance. In recognising these risks, there are opportunities as, indeed, there are responsibilities upon all those engaged with the process to ensure that the conservation solutions do not, in themselves, create new problems to be overcome. The conservation policies that follow have been prepared with this in mind.

7 Conservation Policies

> The purpose of the conservation policy is to state how the conservation of the place may be best achieved both in the long and the short term. It will be specific to that place. [91]

Having set out in Section 5 what is considered to be significant about the Knockando Woolmill and why they are at risk (Section 6), the primary purpose of conservation policies is to define how aspects of significance may be **protected and enhanced** for the future.

Conservation policies considered to be appropriate to the preservation and future adaptation of the Knockando Woolmill, and its interpretation, are set out as follows; those relating to general guiding principles of conservation philosophy and practice are set out in the first section and appear in bold type.

Matters listed as being **detrimental to significance** in Section 5.3 (with a DS prefix) are covered in the penultimate section 'Restoring significance'.

CP01 **Works of repair and consolidation should be undertaken in accordance with the philosophy embraced by international conventions and conservation charters; in general there should be a presumption against conjectural restoration or reconstruction and the works should involve the minimum of intervention to the historic fabric, and they should, wherever possible, be reversible**

CP02 **Techniques of conservation repair, subject to the foregoing, should observe guidance set out in current Technical Advice Notes and other recent advisory publications from Historic Scotland; nothing however should preclude adherence to other accredited sources for best conservation practice**

CP03 **Protect, preserve and enhance all those features of historic importance listed in the Statements of Significance (Section 5) and throughout the evaluation of the historic environment of the Knockando Woolmill in Section 4, even if these are not listed individually in Section 5.**

CP04 **Any new work of intervention to the fabric of the woolmill and the other structures on the site, required to secure present or future uses should preserve and enhance significance, be of the highest standards of contemporary design, and have minimal impact on historic fabric**

CP05 **In general where the historic fabric of the interiors has been lost, (subject to the above clauses) the treatment of spaces in the adaptation to new, or continuing uses, should be carried out in a contemporary manner to the highest design standards as a positive enhancement, but should be deferential *always* to the existing historic fabric**

CP06 **In general, where there are redundant or under-used spaces, consideration should be given to utilising these fully within a programme of continuing, or future uses, for each of the structures on the site**

CP07 Any proposals for changing the historic uses of any of the structures on the site (for which adapting and extending the historic fabric may be required) should be the subject of a detailed heritage impact assessment, which should take into account the recommendations set out within the conservation plan

CP08 The reconstruction or re-creation of missing features or elements of the fabric, deemed to be essential to an appreciation of the integrity of the buildings, their fittings or machinery, and essential to their preservation, should be based on sound historical research and pictorial evidence, or both

CP09 Further, opportunities for the continuing, or future sustainable uses of the Knockando Woolmill should seek not only to enhance the historic environment by adopting the policies set out above, but how to address the amelioration of the damage to the historic environment caused in the past by those matters listed as being *detrimental to significance* in Section 5.3

CP10 For each stage of work seek to appoint conservation professionals with appropriate accreditation, skilled in their respective fields and with knowledge of the historic environment; considerable care should be taken over the preparation of specifications for repair and consolidation works, the intentions of which should be unequivocal as to their scope and content

CP11 In undertaking work of any kind that may pose a risk to the historic environment during the course of its execution, ensure that appropriate protection is in place for the entire duration to an agreed risk management strategy

CP12 In seeking to apply the best standards of conservation only skilled contractors, craftsmen, or conservators should be engaged, capable of interpreting the standards set down in specifications or other documents

CP13 Seek to engage local skills, provided that this is commensurate with achieving the above general aims and, wherever possible, ensure that these skills will be available for the continuing future conservation needs of the historic environment of the site considered *as a whole*

CP14 When engaging professionals, conservators, or craftsmen, seek to ensure that a policy for skills training and continuous learning is promoted, and adhered to

CP15 CP13 and CP14 should apply equally to the skills required to maintain and operate the machinery on the site, and to ensure that these skills are passed on to future generations, and should be an integral part of any conservation management plan prepared for the site

CP16 Record by way of site notes, drawings and photographs all historic features that may be revealed (or concealed) during the course of the works and, likewise, record any features to be removed; the survey products should be annexed to the conservation plan for future reference for when the document is updated

CP17 Oral history relating to the historic environment of the site should be encouraged to be taken of those who lived and worked on the site, and who may have been involved in it in other ways, to be recorded in a permanent form and accessible; further, it should be retained with the conservation plan for future reference as a potential source of knowledge and interpretation

CP18 In parallel with the conservation plan an inventory should be prepared of all machinery presently on the site, and which is known to have existed in the past; the inventory should include references to its purpose, and significance in terms of values, such as rarity

CP19 Ensure, so far as is reasonably possible, that risks to the site arising from natural disasters such as flooding or lightning are anticipated; in the case of flooding, ensure that any proposed flood protection measures are reconciled with the conservation aims of the project

CP20 In general, and subject to the previous clauses, repairs to historic fabric should be undertaken using like materials; where the source of the material cannot be established after reasonable enquiry, or cannot be replicated, considerable care must be exercised over the suitability of replacement material with regard to its performance in use and the potential effects on the authenticity of the element to be conserved; it should be noted that the requirements of this clause apply equally to the historic fabric of the standing structures on the site, to the machinery of the production processes and the power systems within the mill

CP21 There should be a presumption against the use of chemicals in any treatment of the historic fabric; the same considerations must be given to avoid damage to the nature conservation of the site, and in particular to protected endangered wildlife species

CP22 Ensure that specifications for the various types of historic pointing and lime harling reflect the original finish and local traditions, and are based on analysis of the original mortars and their aggregates; similarly where mass concrete construction has been utilised where repairs are needed ensure that the mortar and aggregates replicate those in the original work as closely as possible, based on analysis, which should establish if the mortar is lime or cement based and ascertain the relative strength of the material

CP23 Consistent with the above, in the case of timber subject to fungal attack or continuing dampness, a conservation-led approach should be adopted to cause minimal damage which should extend to controlling sources of dampness and the internal environment, with subsequent monitoring, if judged appropriate

CP24 Having regard to the foregoing ensure that, in considering the future preservation of the site and any sustainable or operational uses, due attention is given to the risks to the site from flooding and from other natural disasters, so far as it is possible to ascertain them

CP25 Have regard to the principles upon which the mill, outbuildings, and the agricultural sheds have been repaired in the past, and the use of vernacular building techniques; ensure that these are not lost when carrying out repairs to the fabric, and in particular have regard to those elements of construction (SS43) that have been

reused, and to the manner in which they may have been reused, being part of the essential character of the mill and its archaeology

CP26 Copies of the conservation plan, once adopted formally by the Trust, should be deposited with the National Monuments Record for Scotland, and in such other locations as the Trust may decide (see also Section 8)

CP27 The conservation plan should be reviewed on a regular basis - preferably at not more than five-yearly intervals - from the date of the formal adoption of the original document by the Trust (see Section 8)

CP28 A fully integrated conservation management plan should be prepared for the site once the proposals for the implementation of the project have been determined; the management plan should set out the strategic objectives for the site, and should include measures for maintaining craft and production skills, repair of historic machinery, and long term objectives for the nature conservation of the site

Mill machinery and power systems

CP29 Seek to preserve, repair and maintain the head dam, sluice and overflow channel, and the mill lade pipe with a view to returning the mill to water power; restore the penstock and launder, repair the masonry to the wheel-pit, overhaul the cast-iron waterwheel together with all associated gearing returning it to working order, and repair the tailrace, all in accordance with specialist advice

CP30 Seek to overhaul all of the historic textile machinery and power drivetrains in accordance with expert advice to return it to working order; in doing so ensure that the mill structure is sufficiently robust to withstand floor loadings imposed by machinery and operating stresses, and that machinery bases are levelled sufficient to permit free-running operation

CP31 Should it be determined that any historic machinery is incapable of being repaired there should be a presumption to preserving it *in situ* to preserve authenticity, observing the principle of minimal intervention (CP01)

CP32 Leave evidence of former machinery (now dismantled) and line shafts serving it, for which there should be a presumption towards preservation *in situ*

CP33 Subject to the requirements of repair, there should be a presumption, wherever possible, towards preserving historic textile machinery *in situ*; appropriate protection should be provided during building operations to reduce risks of preventable damage

CP34 Seek to ensure that there are no risks to the portable heritage of the site, and in particular of hand-operated machinery associated with the textile production processes

The mill, outbuildings and associated fittings

CP35 Consideration should be given to reducing the load on the roof structure of the main roof of the mill by removing the second outer layer; there should be a presumption against replacement of the existing roof structure and, if practicable, the existing sarking together with the original finish of the asphaltic pitch should be left undisturbed

CP36 Analysis of the pitch covering should be undertaken to determine the constituents of the mix, and to add to knowledge of the material; if the profile of the roof permits the material should be overclad in corrugated iron, if possible reused from the existing roof finishes provided that this is commensurate with achieving reasonable life in use expectation of, say, not less than fifty years

CP37 Working from the presumption towards the retention of the existing roof structure (which includes the weaving shed and workshop area), and repairing it as required, within the general terms of the conservation principles set out in the first section above, give consideration to carrying out an options appraisal or a heritage impact assessment that takes into account the following

- Whether the roof timbers can be repaired without major structural intervention, and without affecting authenticity
- The effect on authenticity of replacing roofing timbers
- Performance issues in use, including weather-tightness, risk of condensation, long term control of moisture (and of timber infestation), heat loss, risk of continuing damage from snow loading
- Whether, taking all of the above matters into consideration, the recommendation is to renew the structure, or parts of it

Authenticity may be deemed to include consideration of the lightweight appearance of the existing roof, and the principles of undertaking honest, conservative repairs in the past

CP38 In carrying out repairs to the historic fabric, do not seek to straighten out imperfections in the finished line or planes of cladding or of the structure as these are part of the character of the mill; respect previous repairs such as early propping of floors and roofs

CP39 Consider the reinstatement of the clay pantiled roof finish to the 1870 single storey section of the mill, having due regard to reusing the existing material wherever it is possible to do so and to replicating the profiles; considerations set out in CP37 should be taken into account

CP40 Retain the existing cast-iron rooflights and historic glass, and reuse in any replacement roof in the original locations

CP41 Repair the 'mock' chimneyhead at the west gable of the 1870 extension and seek to establish its original purpose, if any

CP42 Preserve the remains of the former signboard on the west elevation of the workshop

CP43 Preserve and repair the 48-pane industrial lights to the workshop area and protect and preserve the historic glass

CP44 Commensurate with the requirements of CP30 seek to strengthen the structure for the safe accommodation of the loads and stresses imposed by the working historic textile machinery and the shaft lines, and bear in mind the considerations of historical authenticity set out in CP38 above

CP45 Give consideration to the long term implications of site moisture and possible flood damage, and to installing a concrete slab to support the Platt 1870 spinning mule; the floor finish should remain timber boarding, and consideration should be given to reusing the existing floor boards wherever possible

CP46 Ensure that the 'patina' of past uses (SS59) is not destroyed as a result of carrying out repairs; if there is a potential conflict a heritage impact assessment should be undertaken

CP47 Preserve the historic colour scheme throughout the mill; any redecoration should be kept to a minimum and should be based upon historic paint analysis undertaken by specialists

CP48 Install sympathetic lighting throughout the mill, commensurate with the requirements of access to the mill interior and working the historic textile machinery in safety

CP49 When repairing the harling to the mass concrete walls of the weaving shed do not harl over the brick walls where the rebuilding was undertaken following flood damage

CP50 Preserve and repair the surviving fittings within the mill associated with textile production as noted in SS66

CP51 Give consideration to the possibility of reinstating the historic heating system throughout the workshop area, or combining this

with alternative low-energy heating sources which should be evaluated given the history of the use of sustainable energy sources on the site

CP52 When considering the impact of low energy sources for power and heating ensure that this has no adverse visual impact on the historic fabric of the mill, or the grouping of the existing structures on the site

CP53 Restore the external WC shed on a firm, damp-proof foundation on its present site; overhaul the fittings and repair the structure and external finishes and supply and fit a new external door to protect the interior

CP54 Preserve the winter drying shed and repair the structure and corrugated iron cladding ensuring that the dwarf walls are sound, that rising moisture is contained, and ground levels are reduced as required; record the interior for evidence of the former heating and drying system, preserve the surviving tenters, and restore the louvred ventilation panels to working order

CP55 Preserve the tenter frame within the field to the west of the mill, consolidate the bases for the iron frames and prime and paint the ironwork to arrest further decay; the few surviving sections of the timber rails for hanging blankets should be recorded and carefully removed for display purposes elsewhere on the site and consideration should be given to erecting a replica of the timber rails *in situ* for demonstration purposes

CP56 Ensure that any new structures required for improved production of textiles, or to sustain the continuing operations of the site, are the minimum necessary and that they have minimal impact upon the grouping of the mill structures and their setting; designs should be developed in accordance with the guiding principle of CP04

CP57 In view of the risks associated structures of lightweight timber construction, ensure that an effective fire strategy is in place, and bound into the conservation management plan for the site; any fire strategy should take into account the effect on fire fighting on the historic textile machinery

The cottage

CP58 Ensure that the works of repair to the cottage are guided by the additional knowledge that would be gained by instructing a full archaeological investigation and recording exercise of the property

CP59 Give consideration to removing the failing asbestos corrugated cladding to the roof, and to reinstating the original thatched finish

in accordance with the evidence of the building, and with known pictorial evidence; in evaluating this option consideration should be given to the long term issues of future maintenance and the availability of craft skills and materials for repair

CP60 In general there should be a presumption towards preserving the cottage and its interior as found, without returning the interior to an earlier state than that associated with the changes of the late nineteenth century, up to when the dwelling was abandoned as place of residence, and for which there is strong evidence

CP61 Seek new uses for this structure that are compatible with the fragile state of the internal finishes, and which may reduce the ongoing risk of decay to the fabric by requiring conservation heating and the ventilation of the building

CP62 Record the internal finishes as found and, if feasible, retain the layers of wallpaper as evidence of former habitation and preserve the rough sawn board linings inserted to walls and ceilings throughout the cottage

CP63 In conjunction with the foregoing, commission a specialist (or specialists) in historic wallpapers and in domestic textile fabrics to report on their condition, and on appropriate conservation

CP64 Respect the manner in which materials and features have been re-used throughout the cottage (SS43) and preserve evidence of these

CP65 Appoint a specialist to undertake analysis of the historic paint layers of finished joinery and plasterwork and seek to preserve the colour schemes generally as found

CP66 Preserve the plaster finish to the walls of the sitting room at the east end of the dwelling and repair as required, having regard to the preservation of the historic wall decoration (see above)

CP67 Preserve the dairy structure at the east gable, including all remaining plaster, shelving and other features associated with the original uses; restore the roof in accordance with the evidence of the surviving fabric of the building, and install a replacement door in accordance with known pictorial evidence

CP68 Lift the existing floors carefully and reinstate them re-using as much material as is practicable, so that moisture uptake from the solum is controlled to prevent further decay to the flooring and to the bottom rails of the partition walls

CP69 Restore the cast-iron fireplace and grate to the sitting room, and the kitchen range so that they are capable of being re-used if only for ventilating the structure, and repair flues and chimneyheads for this purpose; remove the existing can to the sitting room chimney

CP70 Preserve *in situ* the evidence of the former layout of the cottage, and any associated fittings

CP71 Carefully overhaul the windows as found, ensuring no preventable damage is caused to historic glass; there should be a presumption in favour of repairing timber sections over the replacement of sashes

The Woolmill House

CP72 Seek compatible uses for this structure associated with the sustainable future of the site; such uses should not rule out that for which the property had been constructed originally

CP73 Remove the porch to the rear of the house and restore the original appearance in accordance with the evidence of the fabric of the building and pictorial evidence; in doing so consider whether the layout of the rooms within the single storey section require to be replanned, given that there should be a presumption against retaining the present kitchen and bathroom fittings (DS29)

CP74 Preserve all those features considered to be of significance, listed in SS79; ensure that the fireplaces are repaired and reinstated with the potential for use and for ventilating the rooms, that the flues are capable of conducting gases without risk of combustibility, and that, together with the chimneyheads, any risk of water penetration is reduced

CP75 Consider options for heating the rooms of the property and providing power in conjunction with any proposals for low energy sources for the site taken as a whole, to minimise the effect on the fabric

CP76 When removing the external rendering check for signs of evidence of earlier walling retained when constructing the house.

The shop

CP77 Ensure, so far as is possible, that the structure and external cladding of the shop are repaired without dismantling the structure, and that supporting foundation walls are repaired so as to avoid the transfer of moisture to the bottom rails of the timber frame

CP78 Preserve *in situ* the fittings listed in SS83

CP79 Appoint a specialist to identify, through analysis, the external decorative finish to the external cladding, and seek to replicate the colour, and that of the external joinery

CP80 Preserve and repair the shed containing the plant for the carbide gas unit which should be restored, together with pipework, for interpretation purposes

CP81 Give consideration to reinstating the high level painted sign above the shop window, based on pictorial evidence

The agricultural structures

CP82-99 have been prepared by Ross Noble and have been extracted from his report

CP82 Seek new uses for the 1870s steading, compatible with the protection of its significance as a “Post and Sill Beam” construction

CP83 Repair the damage to the south elevation of the gig shed and original barn, using materials of similar nature and sizes as the original exterior cladding

CP84 Remove the chipboard panel on the north elevation of the gig shed, and consider leaving this elevation in its original open form. If this is not considered acceptable in terms of the new use of the gig shed, then replace the chipboard with a more sensitive material

CP85 Consider replacing the doors on the north elevation with doors similar to the existing door between the stable and byre

CP86 Conserve in situ the agricultural fittings in the steading harness racks, feed box, feed trough and tethers. Include the domestic coat rack, used as a harness rack

CP87 Preserve the ventilation system in the stable and byre, and replace missing timbers with like

CP88 Preserve the colour scheme of windows and doors in south elevation, and the remaining internal door between byre and stable. Where repainting is necessary, it should be based on historic paint analysis undertaken by experts (as in CP47)

CP89 Consider carefully removing a small section of the concrete floor in the stable, to ascertain whether or not the earlier cobbles remain. If so, record the evidence photographically

CP90 If a new use is found for the steading, consider protecting the current floor finishes, by laying down gravel and constructing a wooden floor on joists set on the gravel

CP91 Uncover and relay as necessary the cobbled platt outside the south elevation of the 1870s steading

CP92 Clear the rank vegetation from the dung midden and leave undisturbed the stones marking the edges of the midden

CP93 Consider a new use for the later threshing barn, commensurate with preserving the internal fittings. Preserve the east wall of this barn, which is the original gable of the 1870s steading, and especially preserve the ventilation system, which remains in situ

CP94 Seek to overhaul the sawmill and power drive train in accordance with expert advice to return it to working order

CP95 Consider repair of the sawmill shed, or replace with a like structure

CP96 Preserve the agricultural building to the north of the 1870s steading, and conserve the colour scheme on the doors, based on historic paint analysis

CP97 Consider an archaeological examination of this building, and especially its current floor, to determine its age and original functions

CP98 Whatever the intended final use of the 1870s steading, consider removing much of the mill machinery and other material currently stored there, as it is putting pressure on the fabric of the building

CP99 If the floor of the cottage is lifted, as suggested in CP61, then consider an archaeological examination to determine uses prior to the 1870s, before a new floor is laid. Keep a record of drawings, photographs and a written report of any archaeological features discovered

Site and setting

CP100 Seek to regain the importance of the garden at the heart of the grouping of the buildings, appropriate to the continuing, or compatible new uses of the buildings by restoring the earlier known layouts; wherever possible re-use those discarded elements still to be found on the site

CP101 Repair the gates and railings defining the private garden where the roadway had existed previously, and restore lost detail; redecorate on the basis of surviving evidence

CP102 Cut down the vegetation on the bank of the public road to the north of the site so that the elevated view of the whole of the mill site can be restored, and the site identified readily, as it had been historically

CP103 Seek to restore the footbridge over the burn to reconnect the site with the rest of the community; given the utilitarian design of the structure replaced after the flood, consideration should be given to a new, contemporary structure that enhances the setting of the mill alongside the burn; in conjunction with this, seek to improve the ground contained by the burn, bridge, weaving shed and the west wing of the mill

CP104 In conjunction with the restoration of the footbridge, consider how access paths can be developed on the north slope of the burn, in

accordance with historic maps, having regard to rights of privacy of adjoining proprietors and present land ownership

CP105 Preserve the historic field boundaries and the ford across the burn

CP106 Consolidate and restore the railings on the track leading to the mill, and repaint in the historic colour of which evidence survives; ensure that other historic patterns of agricultural fencing are retained *in situ*

CP107 Seek to preserve the henhouse and its enclosure and carry out repairs to prolong its survival

CP108 Ensure that any infrastructure – improved vehicular access to the site, parking and roadways – necessary to sustain the operations of the site should be planned to have minimal impact on the 'miltoun' when viewed on the approach from the southwest, or from the elevated public roadway to the north of the site

CP109 Ensure that the length of the historic public road leading into the site is preserved, and that the former bridge abutments are cleared of vegetation, so that these historic features can be interpreted and incorporated within the overall setting on the approach to the mill

CP110 Seek sustainable land uses for the agricultural field enclosures, to restore the balance between the working of the land and the mill operations

Ecology of the site

CP111 Seek expert advice on the significance of the natural environment surrounding the mill through carrying out an ecological survey, and avoid preventable damage to wildlife habitats or species from any proposals for the infrastructure of the site

CP112 Ensure that an active plan for managing the banks of the burn is incorporated into any conservation management plan for the site, consistent with the above, and having regard to the historic landscape qualities of the site

Restoring significance

CP113 Replace temporary repairs to the walling of the mill structures (for instance, overcladding in plywood sheet) through restoring the original finishes (DS05)

CP114 Seek to preserve the finish of the historic timber cladding to the mills structures in accordance with the evidence of the building, and pictorial evidence; in doing so have due regard to health and safety issues of working with toxic materials such as creosote (DS06)

CP115 Remove the modern windows to the openings of the 1870 section of the mill and renew with windows following historic patterns in accordance with pictorial evidence (DS08)

CP116 When considering strengthening of the mill structure ensure that the lack of restraint to the head of the masonry walls of the workshop is overcome (particularly along the east elevation), and

repair movement cracks using sympathetic repair techniques (DS10)

CP117 Seek to replace the roof finish to the house, setting aside slates that can be identified from the original roofing scheme, capable of being re-used; strip out the roof ventilators, seek alternative means of ventilating the roof timbers and reslate the roof laid in regular courses in accordance with pictorial evidence (DS20)

CP118 Substitute traditional pattern cast-iron roof skylights for proprietary rooflights, and reinstate in original positions and to original sizes (DS20)

CP119 Remove the pole and TV aerial fixed to the east chimneyhead to the house and all surface cables affixed to the exterior of the property (DS21)

CP120 Carefully remove the modern cement drydash finish to the walls of the house and reinstate the lime sneck harled finish in accordance with pictorial evidence, based on the analysis of the original mortar (DS23)

CP121 Renew any PVC sections to the rainwater goods to the house in cast-iron, retaining all cast-iron material capable of being re-used (DS24)

CP122 Remove the replacement timber windows to the house and renew in sash and case to original appearance as shown on pictorial evidence, to receive a painted finish (DS25)

CP123 Substitute a painted finish for the stained exterior woodwork of the house in accordance with pictorial evidence (DS26)

CP124 Replace the concrete cill to the window introduced to the rear (south) elevation in stone (DS27)

CP125 Seek to resolve problems of water penetration to the west gable of the house (DS28)

CP126 Remove the woodchip paper to the internal walls of the house and seek to redecorate in traditional materials based on knowledge gained from historic paint analysis (DS30)

CP127 Seek to resolve problems of water penetration causing the premature decay of the eaves boards of the cladding to the shop by reverting to the original construction, based on pictorial evidence (DS32)

CP128 Remove the mobile home stored temporarily on site (DS35)

CP129 Seek to ameliorate the potential risks of flooding to the site, having regard equally to the requirements of the historic environment and to those of the natural environment (DS40)

CP130 Seek to remove overhead power cables serving the site (DS42)

CP131 Remove vegetation and tree growth affecting the structure and integrity of the lade along its length (DS43)

Access, interpretation and health and safety issues

CP132 Seek to reconcile the continuing operation of the historic textile machinery with safe working for operators and with the safety of those who may be admitted to the interior of the mill, without destroying its character and authenticity

CP133 Encourage physical and intellectual access to all components of the site, and seek to reconcile issues arising between the reasonableness of satisfying disability access legislation and preserving the historic authenticity of the site and, in particular, the inside of the working mill

CP134 Seek to improve access routes for visitors to the mill, and in particular the surfaces of paths; avoid hard surfaces that are not in keeping with the rural setting which may add to problems of site drainage, and seek to mitigate the reduced headroom where the path crosses the elevated lade pipe, if feasible by devising alternative access routes

CP135 Ensure that wayfinding signage, panels or other media interpreting the site and the textile production processes are not intrusive to the setting and the character of the interior of the mill

CP136 Seek to improve public understanding of all of the processes involved historically in the working of a vertical mill, in relation to past and the surviving machinery through diagrams and other visual aids as appropriate

CP137 Seek to install appropriate interpretation at, or near, the point of entering the site, of the historic landscape and of the old bridge and public road

8 Implementation and review

This section should be read in conjunction with relevant clauses set down in the Conservation Policies in the preceding section.

8.1 Adoption

It is recommended to the Trust that it should seek to adopt the conservation plan formally; if any conditions, or reservations are expressed, they should be appended to the document. The date of adoption should set the dates for regular review.

8.2 Further conservation reports and studies

The Conservation Policies set down recommendations for undertaking specialist reports, the purpose of which would be to reduce risk through guiding repair strategies appropriately, and to increase knowledge, and understanding, of the property. It is important that programmes for the continuing repair or adaptation of the property take into account the timing of these reports, making appropriate allowance, from when they are commissioned, to when they are published.

Any discoveries during the conservation programme throwing light on the history of the various properties on the site, or those who may have been involved with them in the past, should be recorded systematically. Where appropriate an illustrated report on the findings should be prepared, over and above any building recording as suggested in CP16 (page 81). Any documentation produced arising out of recording works should be held centrally with the conservation plan for further consideration at times of review.

If, as is recommended, a conservation management plan is to be prepared for the site once the full extent of the proposals have been established, this should take into account the above matters in addition to those set down in detail in the Conservation Policies and in Section 6 of this conservation plan. A conservation management plan would be a working document, and

would require to be reviewed by the trustees at more regular intervals than the five year cycle suggested for the conservation plan.

8.3 Dissemination

It is recommended that the Trust should give consideration to depositing copies of the adopted conservation plan in the following locations, or with the institutions listed

- On site, in accessible location, or part of a library or database held on site for public research
- The local public library
- The Central Reference Library at The Moray Council
- Scottish Industrial Heritage Society
- Any educational partners, or providers, involved in skills training
- Historic Scotland
- The National Monuments Record of Scotland

A principal copy of the conservation plan should be held by the Trust in a central location, and any information coming to light, from whatever source, should be kept with the document so as to be readily available at times of review.

8.4 Managing change

The conservation plan should be available in full to any architects, surveyors, conservators, archaeologists, or specialists charged with repairing the fabric of the structures and historic machinery, and to others who may be engaged to prepare interpretive material of educational value in relation to the site.

Where works of repair or conservation are to be undertaken, relevant extracts from the conservation plan should, as a matter of course, be provided to those engaged by the Trust to carry out works on its behalf.

8.5 Review

Following adoption it is recommended that the conservation plan should be reviewed at not less than five-yearly intervals, and that any material emerging during the intervening period should be held with the document, and taken into account when conducting any future review.

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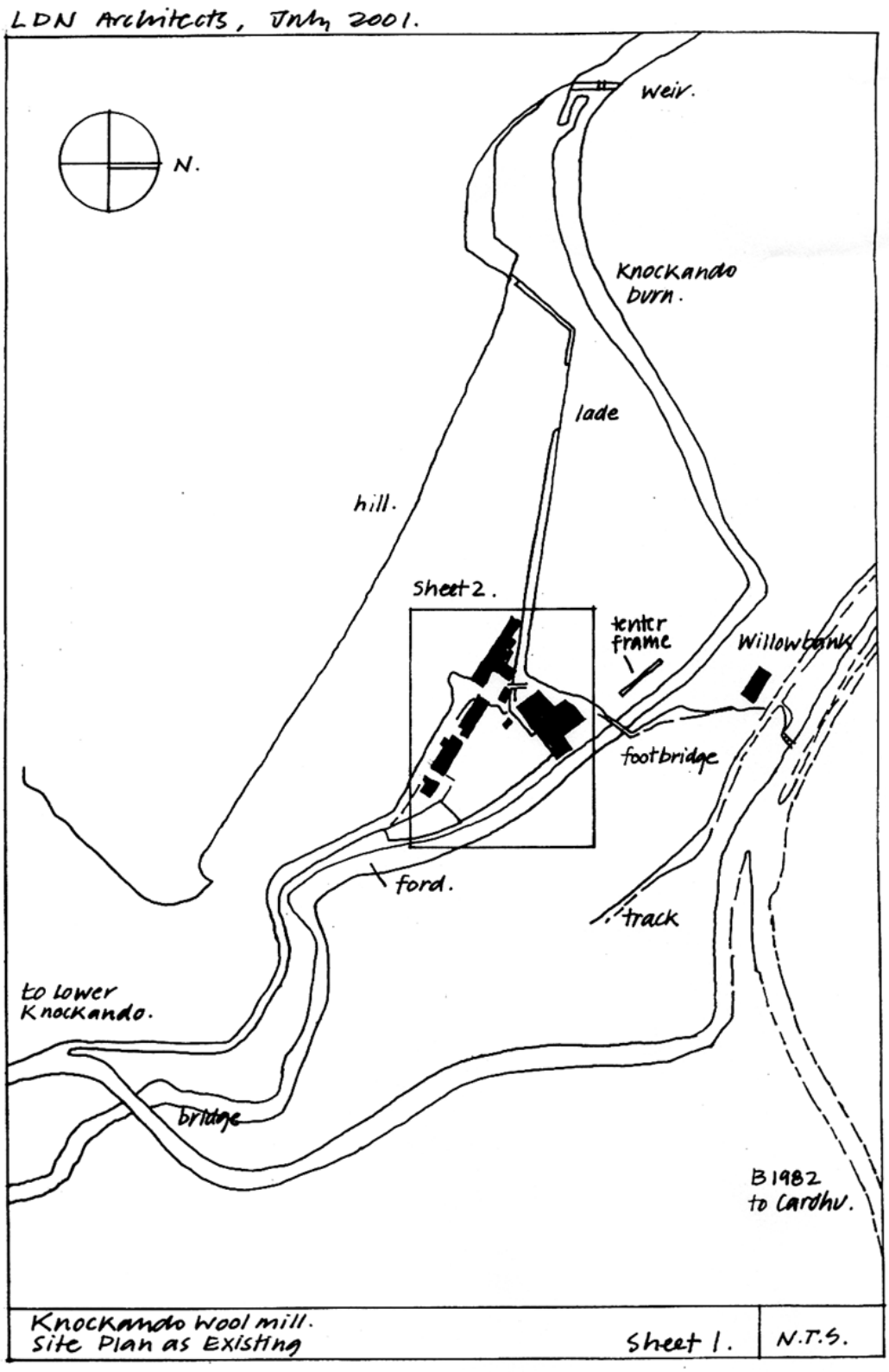
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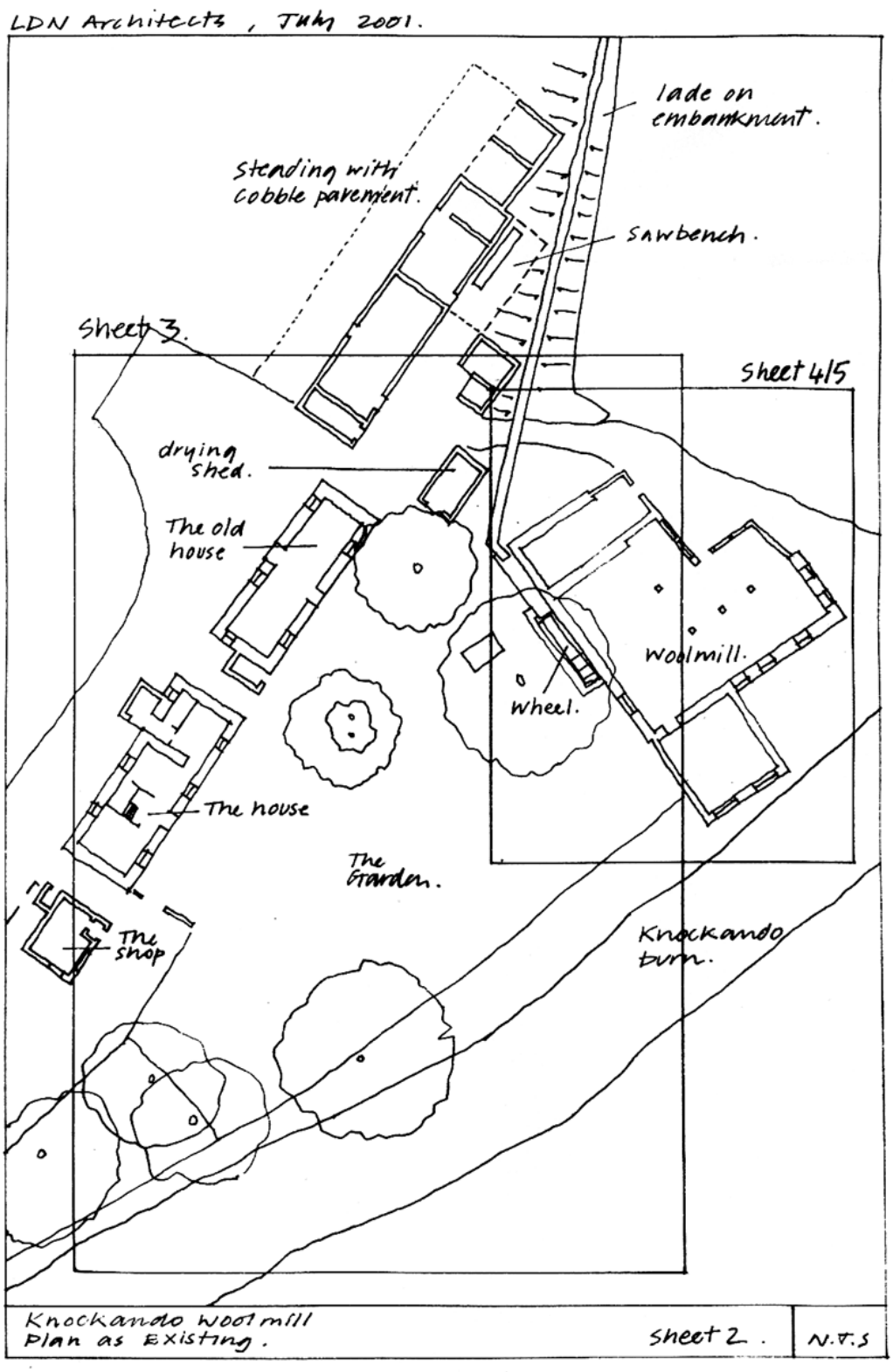
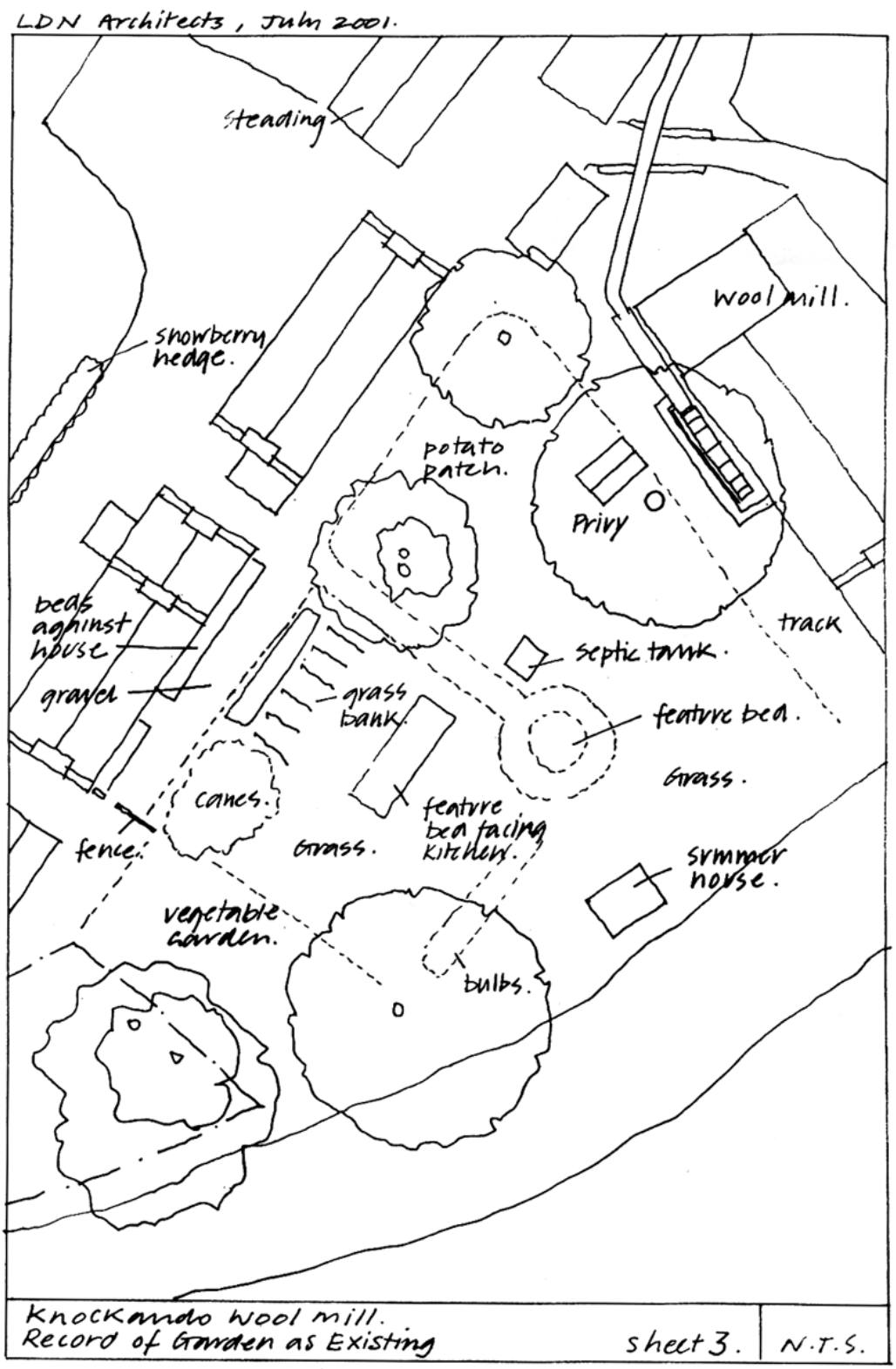
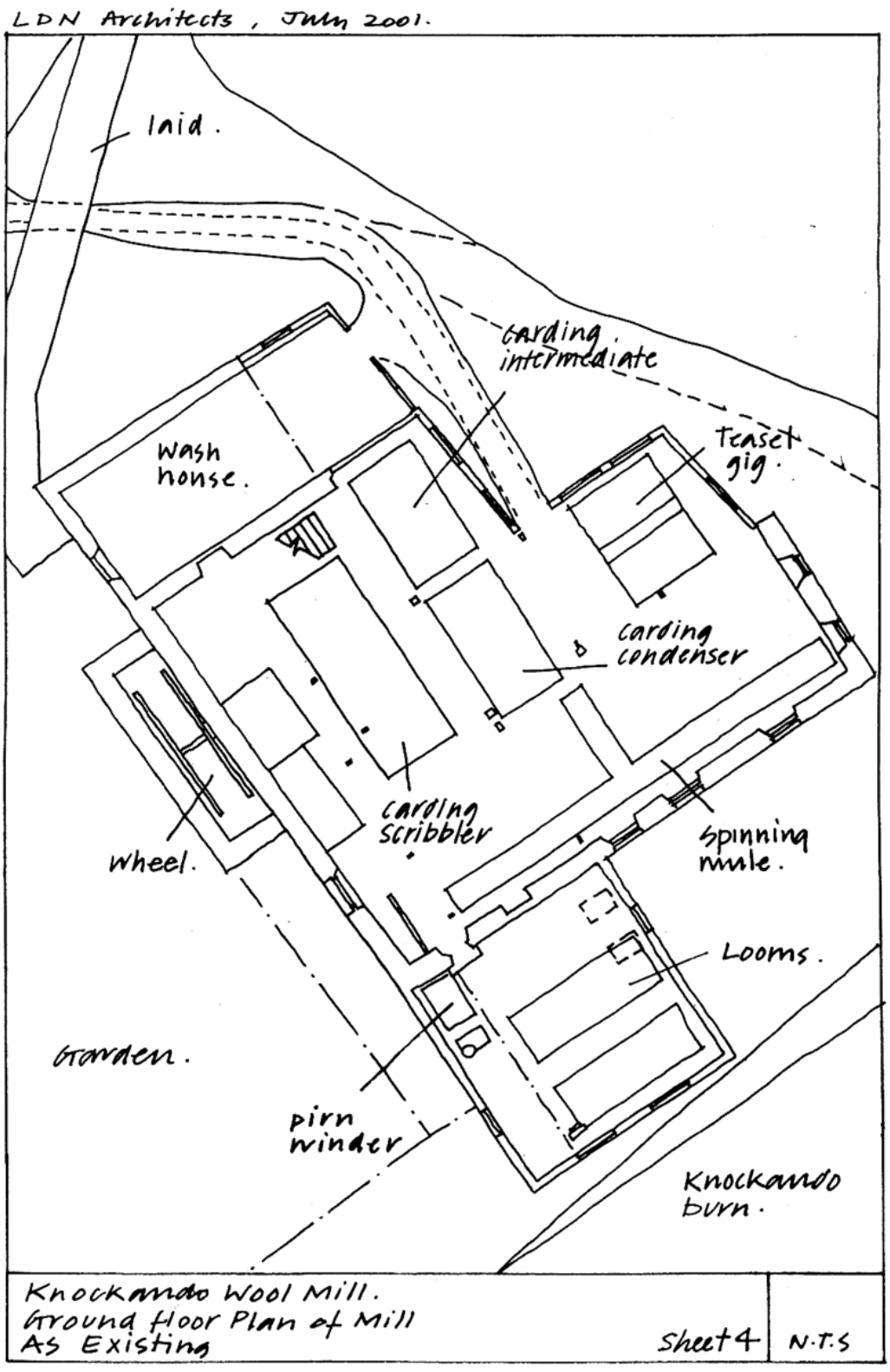
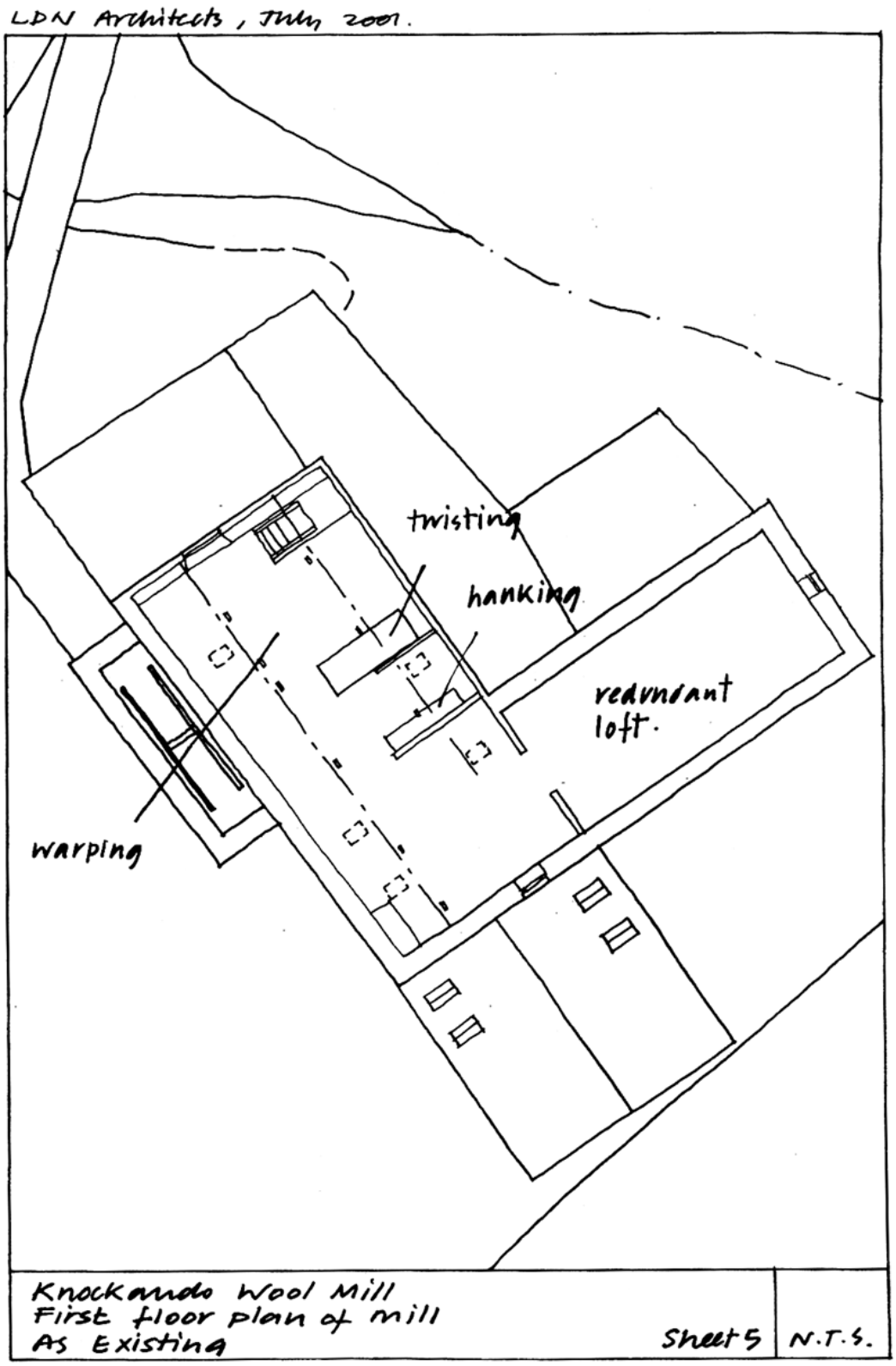
Sheet 1.
N.T.S.


LDN Architects, July 2001.
lade on embankment.
Standing with cobble pavement.
sawbench.
Sheet 3.
Sheet 4/5
drying shed.
The old house
Woolmill.
wheel.
The house
The Garden.
The shop
Knockando burn.
Knockando Woolmill
Plan as Existing.
Sheet 2.
N.T.S


LDN Architects, June 2001.
steading
wool mill.
snowberry hedge.
potato patch.
Privy
track
beds against house
septic tank.
gravel
grass bank
feature bed.
Grass.
canes.
feature bed facing kitchen.
fence.
Grass.
summer house.
vegetable garden.
bulbs.
Knockando Wool Mill.
Record of Garden as Existing
sheet 3.
N.T.S.


LDN Architects, July 2001.
laid.
carding intermediate
teaset gig.
wash house.
carding condenser
carding scribbler
wheel.
spinning mule.
Looms.
Garden.
pirn winder
Knockando burn.
Knockando Wool Mill.
Ground floor Plan of Mill
As Existing
Sheet 4
N.T.S


LDN Architects, July 2001.
twisting
hanking
redundant loft.
warping
Knockando Wool Mill
First floor plan of mill
As Existing
Sheet 5
N.T.S.