

Archaeological Historic Building Record
Grundcruie Sawmill
Methven
MV04



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**ARCHAEOLOGICAL HISTORIC
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Illustration 13: (Photo) Water Treatment House 34 interior. Machine 38.

Illustration 14: (Photo) Concrete Structure 39 overlooking road crossing of Carse Burn.

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ABSTRACT

Alder Archaeology recorded the remains of Grundcruie sawmill (Site Code MV04), near Methven, on 17th March 2017. It was funded by the owner in advance of developing a single house on the site.

The mill complex consisted of a brick chimney, a large stone mill house, a smaller boiler house, and traces of an upper and lower lade beside the Carse Burn. It appeared that the mill had originally (early 19th century) been water-powered, and probably converted to steam power, before falling into disuse. Also observed were a nearby 20th-century water treatment house, and an enigmatic concrete structure in the woods to the W, perhaps a WWII defensive feature.

1 Background

1.1 Introduction

Mr Martin Cameron commissioned Alder Archaeology Ltd to undertake an archaeological standing building record at Grundcruie Sawmill, Methven. The proposed development is a single house in a field about 1.5 km NW of Methven, on the N side of an unclassified road that runs from Methven to Glenalmond, centred on NGR NO 0077 2660. The work (site code MV04) was undertaken on 17th March 2017, in mild but persistently damp and overcast conditions. The requirement was to record the remains of the former sawmill prior to demolition.

The work was designed to satisfy the archaeological condition on development application reference 16/00438/FLL.

1.2 Aims and Objectives

The main aim of this investigation was to record the details of the former sawmill before it is demolished to make way for a new house.

1.3 Reporting

The present document has been prepared as the final report on this recording project. Copies will be sent to the client, Historic Environment Scotland and Perth and Kinross Historic Environment Record.

1.4 Acknowledgements

We wish to thank Mr Martin Cameron who funded this project and guided the author around the site. Sarah Malone of Perth and Kinross Heritage Trust prepared the Terms of Reference.

2 Details of Work

2.1 The Site (Illus 1)

Grundcruie Sawmill stood in a field on the N side of the unclassified road from Methven to Glenalmond, about 1.5 km NW of Methven. Grundcruie farm steading lies about 100 m SW, on the S side of the road. The field slopes down gently from W to E, and also from S to N, before dropping quite sharply to the Carse Burn, which here flows from W to E. N of the Carse Burn the ground rises steadily to form a substantial range of hills. The undulating terrain strongly suggests glacial geology, with no obvious solid outcrops.

The mill stood near the S bank of the burn, set into the slope of ground, and largely hidden from view, except for a tall, square, red brick chimney, free standing on higher ground a little to the S of the mill buildings. The mill buildings were roofless, ruinous, overgrown with vegetation and filled with debris.

2.2 Archaeological Potential

From earlier maps the mill appeared to date from the 19th century, comprising substantial buildings and a complex of water channels. Initial inspection showed that it

was still a substantial ruin, preserving significant evidence of its development and function.

2.3 Archaeological Method

The site was walked over by the author in company with the owner, and then extensively photographed digitally, with descriptive notes. Interpretive plans and elevations were prepared, based on those supplied by the architects, redrawn with detail from the photographs and annotated with information gathered on site. Where features were measurable, they were measured in metres and, where appropriate in centimetres. Measurement in millimetres would have presented false accuracy, given the rough and irregular nature of the features. They were also measured in imperial units where these were likely to have been intentional and meaningful at the time of construction.

The investigation concentrated on the mill buildings, but also took in the surrounding area, including traces of the lade upstream and downstream of the mill, from its disappearance into the woods to the W of the mill, down to its junction with the Carse Burn to the E.

The features observed are described in detail in Appendix 1 Context Register, and Appendix 2, Photographic Register. What follows is an overview.

2.4 Description

General

The ruins of the mill consisted of a square, red brick chimney 01, standing on higher ground directly to the S of the buildings, a large rectangular masonry building to the N, set into the slope of ground, for convenience called the Mill House 02, and a small annexe abutting the S wall of the Mill House, for convenience called Boiler House 28.

Upstream (W) of the mill was an earthwork, tentatively identified as the Upper Lade 32. Downstream (E) was a better-defined Lower Lade 31. Also to the W was a disused rectangular building, here referred to as The Water Treatment House 34. This was not part of the present development, but is in the same ownership. It was briefly observed and recorded 'because it was there', and because its early 20th-century construction may have obscured earthwork features associated with the mill.

Similarly, an enigmatic concrete structure 39 was found in the woods while investigating the possible sources of Upper Lade 32. This might have been connected with the Water Treatment House 34, or even have been a WWII defensive structure.

Chimney 01

This is the most obvious feature associated with the mill, and is clearly visible from the road. The base is 1.49 m (4' 11") square in plan, forming a plinth above head height, about 2.5 m (8') on the surveyors' plan. Above this it tapers to the top, and according to the survey plan is 12.9 m (42'4") in overall height. It leans visibly to the S. The bricks are bright red in colour, with a rough, weathered surface, and may be hand made. They are 9 ½" x 3" x 4" (24 x 7.5 x 10 cm), laid in one course of headers to five courses of stretchers. The pointing is largely weathered away, leaving some of the bricks loose. There is an irregular aperture in the N face of the plinth near ground level, presumably where the flue of a boiler was led into the base of the chimney.

The chimney is to be preserved as a feature in the new development.

Mill House 02

This was the largest element of the ruin. It was a rectangular stone building, approximately 16 m (52.5') E – W x 7.45 m (24.4') N – S. The walls where preserved were 0.72 m (28") thick at ground level, reducing to 0.67 m (26") at first floor level, with a well-defined internal Scarcement 10 marking the position of the first floor.

The building was set into the slope of ground, so that only the well-preserved N Wall 04 was visible to the full height of two stories inside and out. The external faces of the E and W end walls were partly below ground, and the S wall almost entirely so as its upper storey was mostly missing. Where visible, the walls were of whinstone rubble built to courses, with ladder pinning filling the spaces between, and hard sandstone quoins, lintels and jambs of windows and doorways.

The N and E walls leaned out slightly at ground floor level, correcting to vertical at first floor level. The S and W walls might have done the same, if enough of them had survived and been visible. This was not accompanied with obvious cracking, and may have been the result of heavy stone walls sinking into soft ground as they were being built, and being corrected 'on the fly' by the masons as they worked upwards. A similar pattern can be seen in many 19th-century houses in Perth, for example in the Balhousie area, where the ground is very soft sand.

The N Wall 04 survived almost to its full height, with a well-defined build to a level 07 externally at first floor level. This almost corresponded to the internal Scarcement 10, but was in fact 15 cm (6") lower. Above these features were three similar windows, 12, 13 and 14, in the middle and near either end of the wall. These had internal splays, with hard sandstone lintels and sills, and jambs formed of quoins. They originally had internal timber safe lintels, but only one of these survived, over the W Window 12.

Internally there were two different systems of putlogs or joist sockets. At the W end of the wall, there were small rectangular openings 26, not well defined, internally straddling the Scarcement 10, and externally on top of the build to level 07. Below the scarcement there were six large almost square sockets, 15 – 20, partly broken. This might indicate two different phases of flooring, or one set of joists supporting the floor, and the other supporting machinery.

Externally, there was a cluster 21 of six or more apparent joist sockets just above the build to level 07, but on closer examination they seemed to be merely voids created by ladder pinning falling out from between the whinstone blocks, even though some appeared to connect up with the internal putlogs 26.

Near the middle of the N wall was a vertical slot 08, passing through the thickness of the wall, 0.33 m (13") wide and at least 1.1 m high, the bottom being partly obscured below ground and also plugged with modern sheeting. If the mill was water powered, the mill wheel axle could have passed through this slot, though it would have needed to be supported in some other way. A small square slot 09 and a feature 27 blocked up with colliery bricks could also have been connected with mill machinery or perhaps structures to support an incoming mill lade at raised level.

The E Wall 05 was largely missing, hidden below ground, or consisted of doorways, but at the NE corner it survived almost to its full height, with single block at the very top projecting slightly N and E to form a cornice along what must have been the wall head. A sandstone lintel/ threshold 22 spanned a wide gap in the E Wall 05, separating the two doorways on the ground and first floors, the natural curve of the stone arranged to form a slight arch.

Similarly, the W wall was largely missing, partly hidden below ground at ground floor level, and at the upper level surviving only at the corners, and in the middle as the stump of a central pier between two wide doorways, perhaps giving vehicle access to the upper floor.

The existence of doorways to the upper floor at the E and W ends suggests that there may have been external timber stairs or ramps, now lost, otherwise these doors would have led only to a dangerous drop.

Internally the mill house 02 was filled with collapsed timbers and vegetation. Parallel to and 1.5 m S of the N Wall was a low stone wall 11, 0.72 m wide and up to 0.7 m high, defining an oblong depression or pit 23, with a deeper part in the middle, 2.2 m long, centred on the slot 08. This could have been connected with the water wheel and saw machinery inside the mill. In amongst the collapsed and broken timbers was a threaded bolt and washer with a square nut 35, still attached to rotted timbers. The metal was corroded brown, but without extensive delamination, perhaps indicating wrought iron rather than mild steel. Similarly, the use of a square rather than hexagonal nut suggests a 19th or early-20th century date. Square nuts and bolts are rare today except on the railway, and then usually with obsolete bull-headed rail. The timbers were too decayed to judge whether this was a fragment of roof or floor timbers, or mill machinery.

At the E end of the mill house was an internal brick wall 25, 0.53 m W of the E wall 05. It was too overgrown to see properly, and partly obscured by the collapsed concrete slab 24, which it may originally have helped to support. Slab 24 was 0.35 m (1') thick, with an original length of 1.8 m (6') and a broken width of 1.1 m. It seemed to have fallen away from the adjacent boiler house 28, and may originally have projected at first floor level.

Boiler House 28

This was a stone annexe, 8.5 m (27.9') E – W x 4.6 m (15') N – S, built against the S side of the Mill House 02. The Chimney 01 was 0.5 m further S. Because of the slope of ground, the boiler house existed only at first floor level. It was much overgrown, full of rubbish including abandoned bee hives and sheets of corrugated iron, and standing barely 1 m above ground. The W Wall 29 was 0.61 m (2') thick, and was seen to butt up against the S Wall 06 of the Mill House 02. A butt joint in the S wall indicated a blocked opening but was too overgrown and ruinous to determine which was the blocking and which the original wall.

The N wall of the annexe was formed by the S wall 06 of the mill house, and was partly capped by a concrete plinth 30, with threaded iron rods emerging from the top, and an iron shutoff valve on the floor adjacent. This seemed to have been the base for a machine connected with the sawmill, perhaps for example a small steam engine.

Given the proximity to the chimney 01, it seemed likely that this annexe had housed a boiler, and could be conveniently referred to as the boiler house.

Upper Lade 32

This appeared as a straight grassy track running E – W, descending gently from the public road down to the mill, where it arrived in line with the N wall 04 and on the level of the first floor. It was divided from the mill by a grassy ramp 33 which ran down from the surrounding field to the S bank of the Carse Burn. The Lade 32 was about 2 m wide, better defined on its uphill (S) side. At its W end it disappeared under the public road, and could not be clearly identified in the woods on the S side of the road, but could eventually have connected up with the Carse Burn.

The Carse Burn is about 1 m wide, and follows a meandering course through the woods until it passes under the road in a stone arch bridge at the W end of the site. From here it runs W – E past the mill in what is probably an artificial straight line, although partly imposed by the slope of ground on either side. The banks have an unmortared rubble stone revetment 36, which seems to be artificial.

Lower Lade 31

The Lower Lade 31 runs along the foot of the N Wall 04 of the Mill House 02, converging to the Carse Burn, which it eventually joined downstream, at a junction now blocked. The channel is wet and muddy, but no longer carries running water.

Water Treatment House 34

This was not part of the present development, but is in the same ownership, and its early 20th-century construction may have obscured earthwork features associated with the mill. It stands directly to the N of the public road and to the S of the Upper Lade 32. It is a small rectangular building with a cement render and a slated mansard roof. The eaves and gutters are slightly on the short ends of the Building. There is a central door in the S wall, flanked by windows on either side, three small, high windows in N wall, and single windows in E and W end walls.

The building is now disused, but at one time served to treat the main water supply to Methven, presumably running in a pipe under the public road. Internally, it contains disused water treatment machinery, and wooden bins with remains of white powder, probably treatment chemicals, for example to neutralise acid or kill bacteria. Most conspicuous was a mixing machine 38. This was a riveted steel drum, painted blue, with cast-iron fittings. A cast-iron capstan wheel turned a central spindle, fixed to internal cast-iron and steel mixing blades. It was presumably used to mix treatment chemicals into the water.

The general form and style of the building and its contents suggests an early 20th-century date, while their condition suggests disuse for some decades at least. Directly to the N of the building was the wooden cover 37 of a large rectangular square tank. Its position centred on the Treatment House shows that it was part of the same water supply system.

Concrete Structure 39

While searching in the woods upstream for possible features connected with the Upper Lade 32, a concrete structure 39 was found S of the road, hidden in vegetation close to the road bridge crossing the Carse Burn.

The concrete was much overgrown with moss, and had an open, porous fabric, with a rounded natural pebble aggregate, quite different from the dense vibration-compacted structure and angular aggregate of modern concrete. It could have been connected with the early 20th-century water supply, or perhaps a WWII defensive structure guarding the crossing of the Carse Burn. Directly beside the concrete, set in the ground, was a metal fitting with a ferrous rust colour, but a smooth surface. It could have been of bronze or a special alloy steel. The rounded profile and curves of the metal suggest hot forging, not casting, pressing or cutting. Attached to it was a threaded rod with a square nut (not hexagonal), suggesting a mid 20th century date or earlier. It could have been part of water supply equipment, or of a WWII gun mounting or sighting slit.

3 Discussion

The Lower Lade 31 could in theory have connected to the Carse Burn at a point upstream now obscured by the Grassy Ramp 33, and have powered an undershot wheel at the mill. This would make the Upper Lade 32 redundant, perhaps just an access track leading off from the road. However, the Carse Burn is slow, small and shallow, and would have generated very little power from an undershot wheel. It would be surprising to have such a substantial mill building depending on machinery which could barely outperform two men with a pit saw.

By contrast the Upper Lade 32, arriving at first floor level, could have powered a large overshot wheel, discharging into the Lower Lade 31. A fall of perhaps 2 m would have generated substantial power, even from a small and slow-moving volume of water, and seems more credible. This would require a superstructure now missing, perhaps of timber, to carry the upper lade on its final approach to the top of the mill wheel, perhaps related to the features 09 and 27 in the N wall. There is no other sign of this today, and the area is entirely grassed over and perhaps obscured by the Grassy Ramp 33. Any such features might well have been suppressed in the 19th or early 20th century, if the mill was converted to steam power, which was presumably the purpose of building the Chimney 01 and Boiler House 28 with its associated traces of a machine plinth 30.

Even a very small steam engine could have provided more power than the Carse Burn, and perhaps more predictably if the burn was subject to changes in rainfall or prolonged freezing. Running costs need not have been very high, because the boiler could have been fed with waste and offcuts from the sawmill. Wood-fired boilers have limited performance, but they were sometimes used on the railways in the USA and other countries, and the engine at Grundcruie only had to drive a saw, not catch the *Flying Scotsman*.

4 Bibliography

Bowler, D. P. 2017 Grundcruie Saw Mill, Methven, Archaeological Historic Building Recording, Written Scheme of Investigation. Alder Archaeology Ltd, Perth

Malone, S. 2017 Terms of Reference for Historic Building Recording, Land 70 Metres North East Of Grundcruie, Methven. Perth and Kinross Heritage Trust, Perth.

Appendix 1 Context Register

No:	Description
01	Red brick chimney, base 1.49 m square [= 4.9']. Chimney bricks are 9 ½" x 3" x 4" = 24 x 7.5 x 10 cm. One course headers to 5 courses stretchers. Base of chimney square in plan, straight-sided, with plinth above head height, formed of two courses of brick. Upper part tapers to top. Single course band near top, then cornice of three courses, corbelled out. Two courses of brick above cornice. Chimney tilts and bends slightly to S.
02	Mill House. Large rectangular masonry building, ground and first floor, set into slope of ground.
03	W Wall of Mill House 02. 0.67 m thick at first floor level. 7.45 m wide. [= 24.4']. Largely missing at first floor. Represented by N and S corners, and stump of central pier, separating two large entrances at first floor, perhaps for vehicles.
04	N Wall of Mill House 02. 28" = 72 cm thick at basement / ground level. Reduced by scarcement 10 at first floor level. About 15.8 m long [= 52']. Whinstone rubble masonry, built to courses, with ladder pinning between irregular whinstone blocks. Three windows on first floor, evenly spaced, with hard sandstone sills, quoins and lintels. Sandstone quoins at E and W ends of wall. Wall leans out slightly, corrects to vertical at first floor level. Subsidence during construction.
05	E wall of Mill House 02. Largely missing. 28" = 72 cm thick at basement / ground level. Reduced by scarcement 10 at first floor level. At N end, two doorways, ground and first floor, separated by lintel 22. Wall leans out slightly, corrects to vertical at first floor level. No obvious cracking, so probably subsidence during construction on soft, waterlogged ground, corrected 'on the fly' by the masons. Common occurrence, eg in Perth around Balhousie.
06	S wall of Mill House 02. At ground floor level, set into slope of ground. Exterior invisible. Interior much overgrown. At first floor level, mostly missing.
07	External, horizontal change of build / build to level in N Wall 04. 43" = 1.1 m below first floor window sills.
08	Vertical slot in N Wall 04. Externally 0.33 m = 13" wide. Similar internally. Height above ground is 1.1 m plus (bottom buried / hidden by sheeting). Top of slot is 1.6 m below visible Level Build 07 in N wall 04. Centre of slot is 9.4 m W of E Wall 05. Axle slot for mill wheel?
09	Small square slot, 50" = 1.27 m above Level Build 07 in N wall 04. Slot is about 7" = 18 cm high x 6" [= 15 cm] wide. Function unknown.
10	Internal scarcement at first floor level on all four walls of Mill House 02.
11	S wall of Pit 23, 1.5 m S of N wall, 0.72 m thick, max 0.7 m exposed height.
12	Western of three windows in N Wall 02, at first floor level. Internal splay, stone quoins, sill and lintel. Internal wooden lintel.
13	Middle of three windows in N Wall 02, at first floor level. As 12, but wooden lintel missing, stone lintel cracked.
14	East of three windows in N Wall 02, at first floor level. As 12, but wooden lintel missing.

15	Western of six large square putlogs in internal face of N wall. About 1' = 30 cm below internal Scarcement 10. Irregular and broken, but roughly 0.5 m wide, 0.3 m deep. Centre is 2.35 m E of internal face of W wall 03.
16	Second of six large square putlogs in internal face of N wall. As 15. 2.5 m E of 15 (between centres).
17	Third of six large square putlogs in internal face of N wall. As 15. 1.5 m E of 16 (between centres).
18	Fourth of six large square putlogs in internal face of N wall. As 15. 1.6 m E of 17 (between centres).
19	Fifth of six large square putlogs in internal face of N wall. As 15. 2.3 m E of 18 (between centres).
20	Eastern of six large square putlogs in internal face of N wall. As 15. 2 m E of 19 (between centres). 2 m W of E wall 05.
21	Cluster of about six false putlog holes in external face of N Wall 02 at first floor level, created by falling out of ladder pinning between large rubble blocks. Some connect through to genuine putlogs on internal wall face.
22	Stone lintel / sill in E Wall 05, dividing ground and first floor doorways. 1.9 m wide, 16 cm = 6" deep, 12" [= 30 cm] broad. Natural curve of stone forms slight arch.
23	Internal depression, probable saw pit, adjacent to N Wall 04. Middle of pit is deeper, 2.2 m long, centred on axle slot 08.
24	Fallen concrete slab in SE corner of Mill House 02. Original length 6' [= 1.8 m], x 1.1 m wide (broken) x 1' [= 0.35 m] thick.
25	Internal brick wall, SE corner of Mill House 02. 0.53 m W of E Wall 05.
26	Row of putlogs in W end of N Wall 04. Internally, straddle scarcement 10. Externally, on top of Level Build 07.
27	Colliery brick on edge embedded in external face of N Wall 04. Just W of Slot 08, 34 cm down from Level Build 07. Brick is 10" = 25 cm x 4" = 10 cm. Stamped ETNA (inverted) in exposed frog. Second colliery brick below (no stamp visible), and other brick fragments. Presumably repair, or blocking of disused aperture.
28	Stone-built annexe to S of Mill House 02, adjacent to Chimney 01. On raised ground, level with first floor of Mill House 02. Very ruinous. Presumed boiler or engine house.
29	W wall of Boiler House 28. 2' = 0.61 m thick.
30	Concrete machine base or plinth in Boiler House 28. 77" x 33" x 24" = 6.4' x 2.75' x 2' = 1.69 x 0.83 x 0.61 m. Iron or steel threaded studs emerge from concrete, fastening for machinery now removed. Iron valve housing adjacent.
31	Lower lade at foot of N Wall 04 of Mill House 02. Approximately 1.4 m wide at base, 2.4 m wide at top. 0.35 m deep. Starts 0.4 m out from N wall 04. Continues to junction with Carse Burn.
32	Upper Lade. Visible only as dry grassy earthwork. N edge not well defined. Runs W – E across site. W end disappears under public road N of Water Treatment House. E end obscured by Grassy Ramp 33, but heads towards NW corner of Mill House 02, at first floor level. Perhaps continued in timber structure now missing. Could have powered overshot wheel, falling to Lower Lade 31. Source of Lade not clearly visible in woods to S and W of public road, but could have led back to meanders of Carse Bursn, with some sort of weir now missing.

Appendix 2 Photographic Register

<i>Image No</i>	<i>Description</i>	<i>View</i>
001	From public road. Building to N of Chimney 01 hidden by fall of ground. Water treatment house 34 by roadside to NW.	NNW
002 – 3	Detail, red brick chimney with Mill House 02 to N. Tilt and curve of chimney is real, not optical illusion. Base of chimney square in plan, is straight-sided, with plinth above head height, formed of two courses of brick. Upper part tapers to top. Single course band near top, then cornice of three courses, corbelled out. Two courses of brick above cornice.	NNW
004	From E. Chimney 01 with overgrown buildings to N, set into slope. Water Treatment House 34 in background.	WNW
005	Red brick chimney 01 with buildings to N. Rising ground to N beyond burn.	NE
006	Overgrown ruined buildings 02 and 28 to N of chimney 01. External face of S Wall 06.	N
007	Red brick chimney 01 and Boiler House 29. Ground falls steeply to N, with Mill House 02 set into slope.	ENE
008	Detail of Boiler House 28.	ENE
009	Detail, base of chimney 01 with plinth above head height formed of two courses of brick. Detail of weathered brick on W face. One course headers to 5 courses stretchers.	ENE
010	Detail, S face, base of chimney 01. One course headers to 5 courses stretchers.	NNW
011	View over Boiler House 28 to interior of Mill House 02.	NNW
012	E face, base of chimney 01. One course headers to 5 courses stretchers. Tilt to S is real, not optical illusion. Upper part also one course headers to 5 courses stretchers.	WSW
013	E face, upper part of chimney 01 against overcast sky.	WSW
014 – 6	Mill House 02 set into sloping ground. W Wall 03 of Mill House 02 building largely missing. Sheets of corrugated iron to protect drop into Mill House interior.	E
017	Detail, NW corner and interior of N Wall 04. Line of vegetation marks Scarcement 10 at first floor level. W Wall 03 with built S end, showing N jamb of vehicle entrance to first floor. Stump of central pier in W Wall 03 just visible above wood and corrugated iron fence.	NE
018	As 017. Window 12 in N Wall 04 at W end.	NNE
019	Detail of Window 12, with internal splay, stone sill and internal wooden lintel.	NNE
020 – 21	View along internal face of N Wall 04, showing scarcement at first floor level. Rectangular opening 08 at ground floor level, perhaps for water wheel axle. Entrances in E Wall 05 at ground and first floor levels, bridged by stone lintel 22.	ENE
022	Overgrown interior and internal face of S Wall 06 with Scarcement 10 at first floor level. Stump of central pier in W Wall 03 visible at R edge of view.	ESE

023	Overgrown interior with fallen trees and timbers. Internal face of E Wall 05 with entrances on ground and first floors. Collapsed structure in SE corner.	ENE
024	Detail of W Wall 03, with stump of central pier behind corrugated iron fence.	SSE
025 – 7	External elevation, N Wall 04, with chimney 01 beyond. Whinstone rubble masonry, built to courses, with ladder pinning between irregular whinstone blocks. Three windows on first floor, evenly spaced, with hard sandstone sills, quoins and lintels. Sandstone quoins at E and W ends of wall. Masonry built to a level 05 at first floor. Green plastic sheeting marks external aperture 08 near ground level, perhaps for water wheel axle. Square socket 09 at first floor level, in between W and central window. At E end, single block shows cornice at wall head over E wall.	SSE
028	Detail, W end of wall 04. Quoins partly fallen away at NW corner. Ladder pinning falling away, creating false putlog holes 21, especially along first floor level. View of W Window 12. Square socket 09 visible to E of W Window 12.	SSE
029	Detail of square socket 09.	SSE
030 – 1	Detail of false putlogs 21 created by falling out of ladder pinning. Some connect through to genuine putlogs on internal wall face.	SSE
032	Detail of aperture 08 at ground level, plugged with green plastic sheeting. Perhaps for water wheel axle. Frogged colliery brick 27 set in wall above.	SSE
033	Detail of frogged colliery brick 27. Inscription (inverted) in frog is ETNA.	SSE
034	Detail, E end of Wall 04. E window. Quoins at NE corner, with cornice at wall head. E Wall 02 leans out slightly, corrects to vertical at first floor level. No obvious cracking, so probably subsidence during construction on soft, waterlogged ground, corrected 'on the fly' by the masons. Common occurrence, eg in Perth around Balhousie.	SSE
035	N Wall 04 and NE corner. Build to level 05 at first floor clearly visible.	S
036	Detail of NE corner. Build to Level 05 in N Wall 04 is 2 courses higher than top of lintel 22 in E wall 05.	S
037	E Wall 05, building set into slope of ground. E wall ends in quoins of built edge, forming entrances at ground and first floor level. N wall leans out slightly, corrects to vertical at first floor level. Subsidence during construction.	WSW
038	Detail of E Wall 05. Stone Lintel / sill 22 dividing ground and first floor. Slight natural arch.	WSW
039	Detail of Lintel 22. Internal Scarcement 10 in N wall 04 about level with top of lintel.	WSW
040	Overgrown interior. Scarcement 10 in N Wall 04 at first floor. W Wall 04 mostly missing at first floor, with central pier reduced to stump. S Wall 06 ruinous, with scarcement and doorway at first floor.	WSW
041	Internal view of NE corner.	NE
042	E half of N Wall 04, internal. Scarcement 10 at first floor. Pointing survives better below first floor, perhaps more sheltered. Large square joist socket / putlog 20 below scarcement, near W edge of view.	NNE

043	Middle of N Wall 04 internal. Three square joist sockets, 16, 17, 18 below Scarcement 10. 17 just W of Window 13, 18 just E. Central opening 08 at ground level plugged with green sheeting.	NW
044	W half of N Wall 04, internal. Three square joist sockets / putlogs, 15, 16, 17, visible below Scarcement 10.	WNE
045	Detail of ground level opening 08 in N Wall 04, plugged with green sheeting.	N
046	Detail, NW corner, internal.	NW
047	Detail, W Wall 03, internal. Stump of central pier between first floor doorways.	WSW
048	Overgrown interior. Collapsed timbers and tree branches. Long pit 23 adjacent to N Wall 04.	WSW
049 – 51	Detail, collapsed timbers with square iron nut, bolt and washer 35.	-
052	Detail, NW corner, internal. Scarcement 10 in N and W walls. Pointing better preserved below scarcement. Quoins in Window 12 and W doorway.	NW
053	Overgrown interior. Collapsed timbers and tree branches. Long pit 23 adjacent to N wall.	ENE
054 – 6	Overgrown interior. Collapsed timbers and tree branches. Long pit 23 adjacent to N wall. S wall 06 ruinous, with two entrances at first floor. Collapsed concrete 24 in SE corner.	E
057	Detail, middle of ruinous S wall 06 and entrances.	SE
058 – 9	Detail, E end of ruinous S wall. Capped with concrete plinth 30. Chimney 01 beyond.	S
060	Detail, E end of ruinous S wall. Capped with concrete plinth 30. Partly collapsed 24 in foreground	SSE
061	Detail, concrete plinth 24 partly collapsed.	SSE
062	Overgrown interior. Collapsed timbers and tree branches. Long pit 23 adjacent to N wall 04. S Wall 06 ruinous, with two entrances at first floor. Collapsed concrete 24 in SE corner.	E
062	Detail, NE corner, with entrances divided by stone lintel 22.	ENE
063	Exterior view of overgrown E Wall 05, set into slope of ground.	WSW
064 – 6	Detail, E exterior of Boiler House 28, overgrown. Chimney 01 adjacent.	WSW
067	Detail, overgrown remains of E wall, Boiler House 28.	W
068	Detail, overgrown interior of Boiler House 28.	NW
069	Detail, overgrown interior of Boiler House 28. Mill House 02 beyond.	N
070	Detail, Concrete Plinth 30 capping S Wall 06 of main building. Disused bee hives on top.	NW
071	Detail, iron valve housing adjacent to Concrete Plinth 30.	NW

072	Detail, iron or steel threaded stud emerging from Concrete Plinth 30.	W
073	Boiler House 28 interior.	
074	S wall of Boiler House 28, interior.	SSE
075	Detail, blocked opening.	SSE
076	Detail, W end of wall. Base of chimney 01, with irregular opening in N face.	S
077	W wall of Boiler House 28, internal, mostly missing.	WSW
078	Detail, NW corner of Boiler House 28, with Mill House 02 beyond.	NW
079	Internal face of N wall 04, Mill House 02, seen from Boiler House 28.	NNW
080	Internal face of N wall 04, Mill House 02, seen from Boiler House 28.	NW
081	N wall of Boiler House 28, overgrown, with Chimney 01 adjacent. Water Treatment House 34 in background.	WSW
082	N wall of Boiler House 28, external face.	NNW
083	Detail, brickwork of Chimney 01, weathered.	
084	Detail, brick exposed.	
085	External view, SW corner of Boiler House 28.	NE
086	Overgrown interior of Boiler House 28.	ENE
087	Detail of W Wall 29.	ENE
088	Detail, W Wall 29 abuts S Wall 06 of Mill House 02.	NE
089	Internal face of N Wall 04, Mill House 02, seen from Boiler House 28.	NW
090 – 1	Lower mill lade 31, downstream from mill.	ENE
092 – 3	Lower mill lade 31, looking back to mill.	WSW
094 – 5	Lower mill lade 31, looking back to mill. Carse Burn on R.	WSW
096	Detail, Carse Burn.	NNW
097 – 8	Carse Burn.	WNW
099	Looking downstream to convergence of lade 31 and Carse Burn.	E
100 – 1	Looking back up lade 31 to Mill	WSW
102	From mill upstream along Carse Burn	W
103	From mill upstream along Carse Burn. Water Treatment House 34 on L.	WSW
104	From Carse Burn up to Water Treatment House 34 and upper lade 32.	SW

105	Down to Carse Burn. Mill on R.	NE
106	From Carse Burn to mill. Lower Lade 31 at foot of Mill House 02. Upper lade 32 to R.	SE
107 – 8	E along Carse Burn. Mill on R.	E
109 – 10	W upstream along Carse Burn. Water Treatment House 34 on L. Grassy Ramp 33 descending to Carse Burn.	W
111	From upper lade across ramp 33 to lower lade 31 at foot of Mill House 02.	ENE
112	From mill along upper lade 32 to Water Treatment House 34.	WSW
113	Water Treatment House 34 Surrounded by mature trees.	SW
114	Back up ramp 33 to mill and upper lade 32.	ESE
115 – 6	Back along Carse Burn to mill. Upper lade 32 and Water Treatment House 34 on R.	E
117 – 9	Detail of Carse Burn. Rubble stone revetment 38.	NW
120 – 1	Carse Burn passing under road bridge	NW
122	Looking back along Carse Burn to mill. Road, Water Treatment House 34 and upper lade 32 on R.	E
123 – 4	Looking back along road to Water Treatment House 34. Upper lade 32 converges to road near Water Treatment House.	ESE
125 – 6	Looking back along upper lade 32 to mill. Water Treatment House 34 on R.	E
127 – 8	Detail, convergence of upper lade 32 to road.	W
129 – 30	W side of Water Treatment House 34. Reservoir tank 37 to L.	ESE
131	Detail, reservoir tank 37.	ENE
132	Detail of colliery brick on tank cover. AIRDRIE in frog.	
133	N elevation of Water Treatment House 34, with Water Tank 37 in front.	SSW
134	E elevation of Water Treatment House 34, with Water Tank 37 to R.	WNW
135	SE corner of Water Treatment House 34. Mansard roof with overhanging eaves. Higher eaves on shorter ends.	NW
136	Shutoff valves in ground in front of Water Treatment House 34.	
137	Interior. Treatment mixer 38.	N
138	Interior. Treatment mixer 38 and other machinery.	NE
139	Interior. Treatment mixer and other machinery. Tall dark cylinder on R perhaps pressure stabiliser.	SE

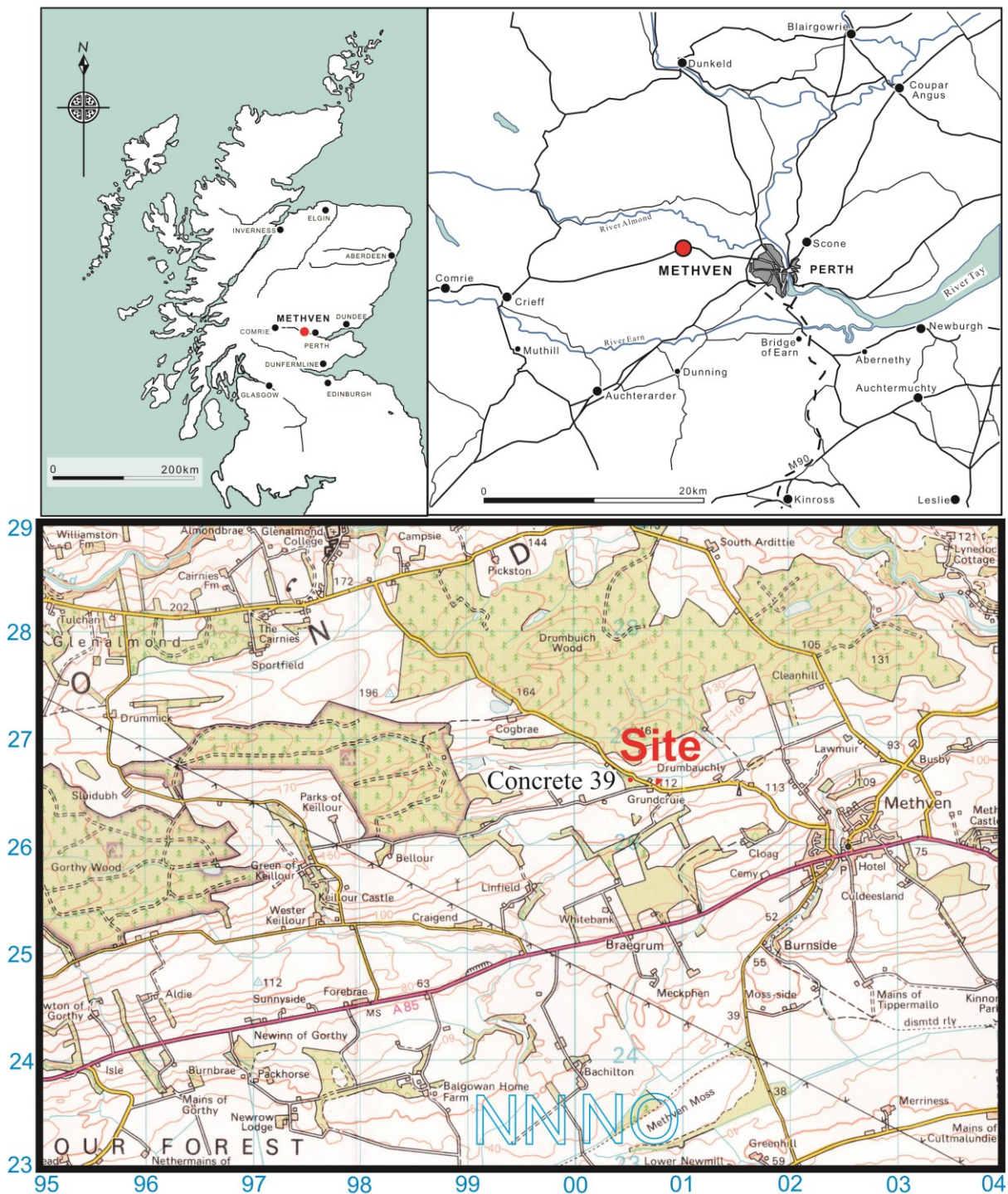
140	Detail of cylinder.	SE
141 – 3	Detail of treatment mixer 38. Mixer blades inside.	NE
144	View back to mill.	ENE
145	S elevation of Water Treatment House 34.	NE
146 – 7	View along road from convergence of upper lade towards Treatment House 34.	ESE
148	Concrete structure 39 in woods to S of road. Water related or WWII?	N
149	Concrete structure 39 in woods to S of road. Water related or WWII?	E
150	Metal fitting adjacent to concrete structure. Bronze?	
151 - 3	Meanders of Carse Burn upstream of road bridge.	
154	Possible alignment in woods upstream of lade converging to road.	E
155	General view back to mill from bridge over Carse Burn.	E
156	General view back to mill from beyond bridge over Carse Burn.	ESE

Appendix 3 Discovery & Excavation in Scotland Entry

LOCAL AUTHORITY:	Perth and Kinross Council
PROJECT TITLE/SITE NAME:	Grundcruie Sawmill, Methven
PROJECT CODE:	MV04
PARISH:	Methven
NAME OF CONTRIBUTOR:	David Bowler
NAME OF ORGANISATION:	Alder Archaeology Ltd
TYPE(S) OF PROJECT:	Historic Building Record
NMRS NO(S):	-
SITE/MONUMENT TYPE(S):	Industrial
SIGNIFICANT FINDS:	None
NGR (2 letters, 8 or 10 figures)	NO 0077 2660
START DATE (this season)	17 th March 2017
END DATE (this season)	17 th March 2017
PREVIOUS WORK (incl. DES ref.)	-
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	<p>Alder Archaeology recorded the remains of Grundcruie sawmill (Site Code MV04), near Methven, on 17th March 2017. It was funded by the owner in advance of developing a single house on the site.</p> <p>The mill complex consisted of a brick chimney, a large stone mill house, a smaller boiler house, and traces of an upper and lower lade beside the Carse Burn. It appeared that the mill had originally (early 19th century) been water-powered, and probably converted to steam power, before falling into disuse. Also observed were a nearby 20th-century water treatment house, and an enigmatic concrete structure in the woods to the W, perhaps a WWII defensive feature.</p>
PROPOSED FUTURE WORK:	None
CAPTION(S) FOR ILLUSTRS:	Grundcruie Mill House, N Elevation
SPONSOR OR FUNDING BODY:	Mr Martin Cameron
ADDRESS OF MAIN CONTRIBUTOR:	Alder Archaeology Ltd, 55 South Methven Street, Perth PH1 5NX
EMAIL ADDRESS:	director@alderarchaeology.co.uk
ARCHIVE LOCATION (intended/deposited)	HES (intended)

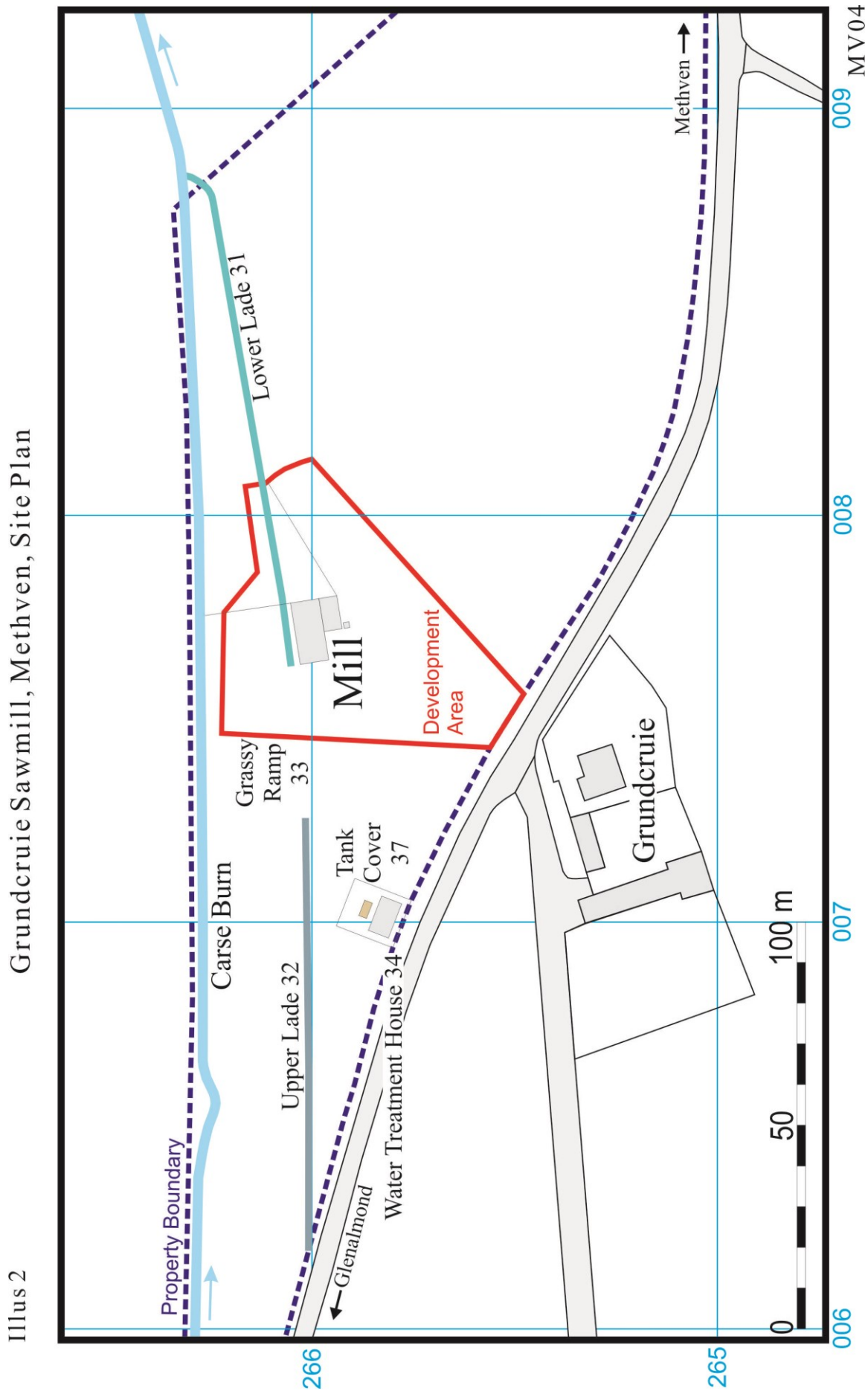
Illus 1

Grundcruie Sawmill, Methven Location



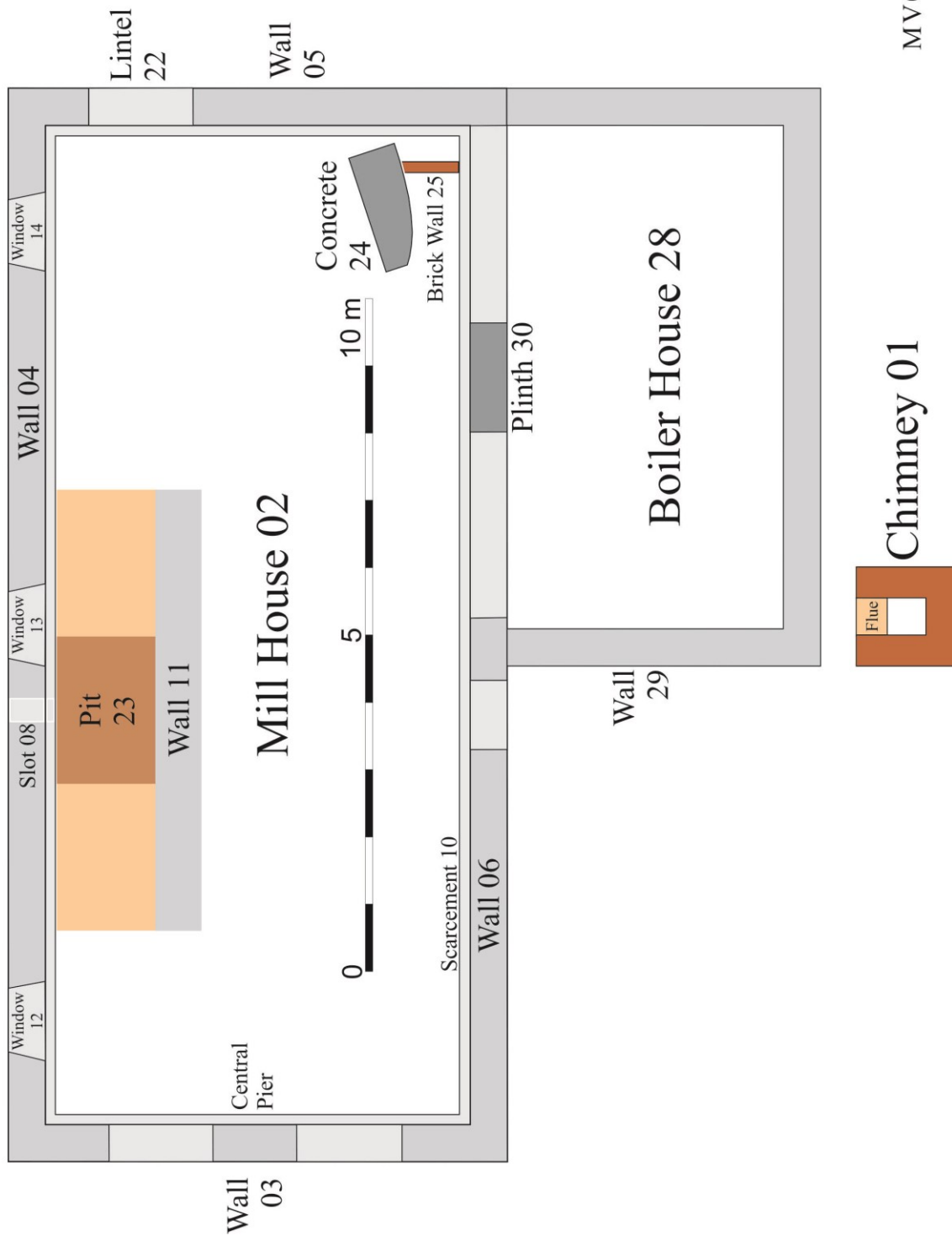
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MV04



Illus 3

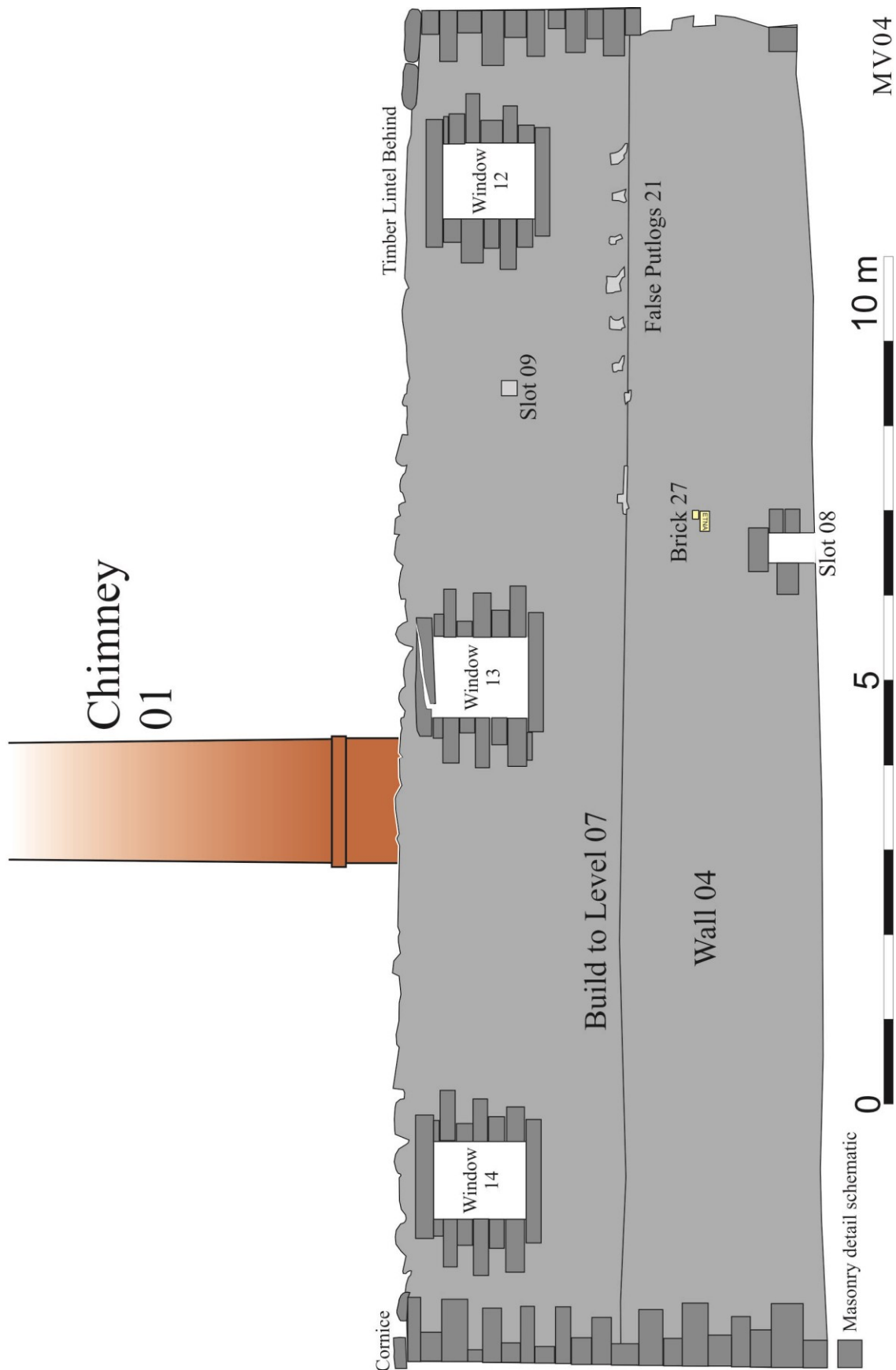
Grundcruie Sawmill, Methven, Plan



MV04

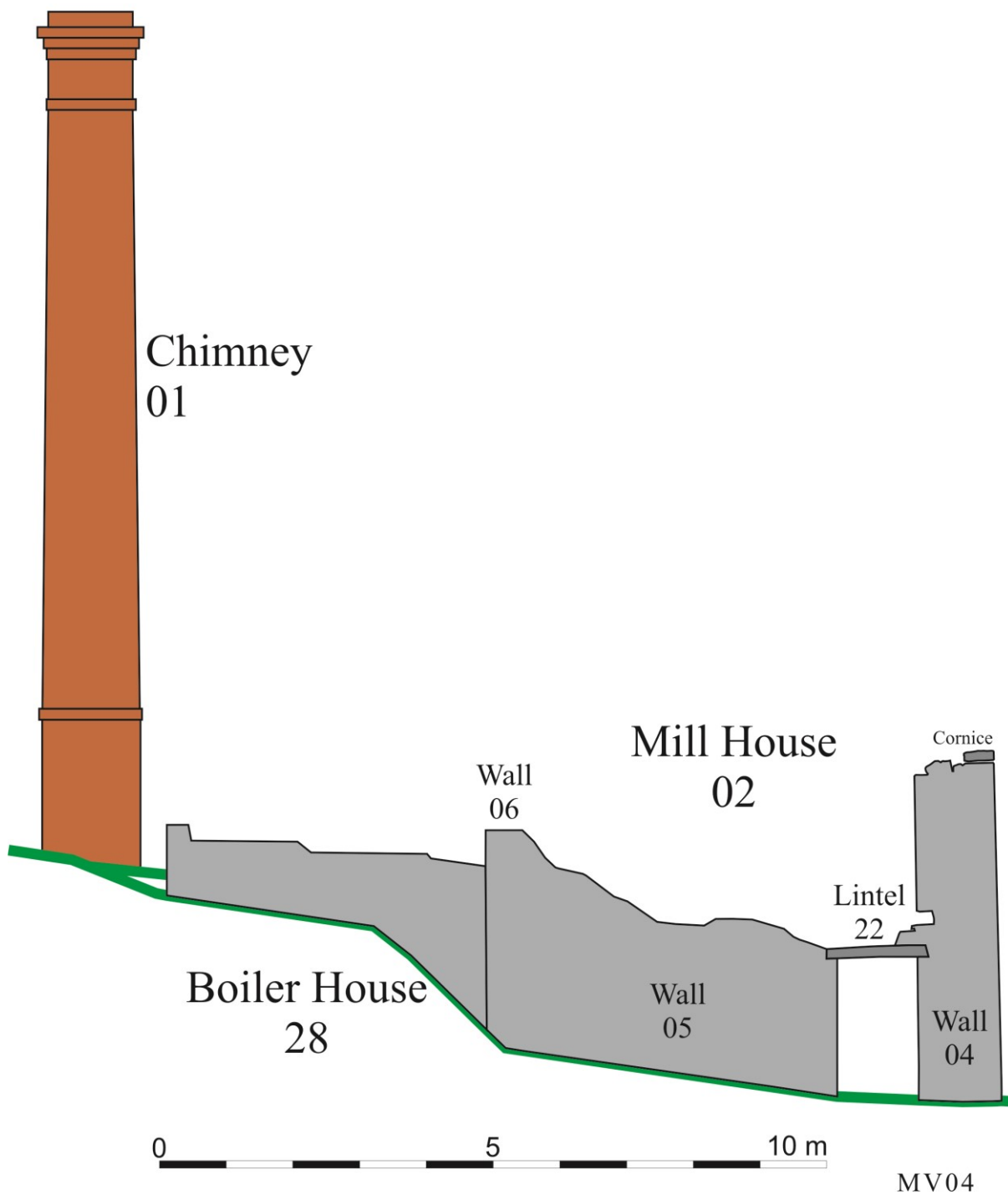
Grundcruie Sawmill, Methven, NE Elevation

Illus 4



Illus 5

Grundcruie Sawmill, Methven,
E Elevation



Illus 6 - 8

Grundcruie Sawmill, Methven



Illus 6 Mill House 02, N Elevation. Chimney 01 behind.



Illus 7 Mill House 02 and Lower Lade 31 from Upper Lade 32.
Grassy Ramp 33 in foreground. Carse Burn to L.



Illus 8 Mill House 02 interior. W Wall 03 ahead. Pit 23 and
Wall 11 under vegetation in foreground. Wall 04 to R with
Scarcement 10 and Putlogs 15 - 20 below.

MV04

Illus 12 - 14

Grundcruie Sawmill, Methven



Illus 12 Water Treatment House 34 from road.



Illus 13 Water Treatment House 34 interior. Machine 38.



Illus 14 Concrete Structure 39 overlooking road crossing of Carse Burn.

MV04