THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

The Old Mill, Pont Faen, Brecon, Powys ARCHAEOLOGICAL BUILDING SURVEY



CPAT Report No 396

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Report for Mr J Parsons

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CONTENTS

- 1 INTRODUCTION
- 2 LOCATION AND TOPOGRAPHY
- 3 HISTORICAL BACKGROUND
- 4 THE WATCHING BRIEF
- 5 CONCLUSIONS
- 6 ACKNOWLEDGEMENTS
- 7 REFERENCES

APPENDIX 1: SPECIFICATION

APPENDIX 2: SITE ARCHIVE

ILLUSTRATIONS

- Fig. 1 Location 1:2,500
- Fig. 2 Tithe Survey of Merthyr Cynog parish, 1840
- Fig. 3 Ordnance Survey Surveyors' drawing 1809-36
- Fig. 4 Ordnance Survey 1st edition 25", 1888
- Fig. 5 Ordnance Survey 2nd edition 25", 1904
- Fig. 6 Building elevations
- Fig. 7 Floor plans
- Plate 1 North elevation
- Plate 2 South elevation
- Plate 3 West elevation
- Plate 4 Second floor interior showing sack hoist
- Plate 5 East elevation
- Plate 6 Remains of turbine and wheelpit
- Plate 7 Stone nut mounting for northern millstones
- Plate 8 Position of former stone nut mounting for southern millstones
- Plate 9 Former axle tree
- Plate 10 First floor interior: setting for northern millstones

1 INTRODUCTION

- 1.1 In August 2000, CPAT Contracts Section was invited by Mr Jonathan Parsons to submit a quotation and specification for an archaeological building survey at The Old Mill, Pont Faen, Brecon. The quotation was accepted and the work undertaken during September 2000.
- 1.2 The building survey was undertaken in connection with proposals (planning application B97/0204) to convert the Old Mill into a dwelling. The Curatorial Section of the Clwyd-Powys Archaeological Trust, in its capacity as archaeological advisors to the local planning authority, had determined that a building survey was required and produced a brief (No ASB 387, dated 29 June 2000) which described the scheme of archaeological works.

2 LOCATION AND TOPOGRAPHY

2.1 Pont Faen lies c. 6.7km north-west of Brecon at the confluence of the Ysgir Fechan and Ysgir Fawr. The Old Mill is situated on the eastern side of the village (Fig. 1; SN 9966234122), on the north bank of the Ysgir Fawr, adjacent to Mill House (plate 2).

3 HISTORICAL BACKGROUND

- 3.1 A desktop study was undertaken involving the examination of all readily available primary and secondary documentary, cartographic, pictorial, photographic and oral sources. Repositories consulted included the following: Regional Sites and Monuments Record (SMR), CPAT, Welshpool; the National Monuments Record, Royal Commission on Ancient and Historical Monuments in Wales (RCAHMW), Aberystwyth; the National Library of Wales, Aberystwyth; and Powys County Archives, Llandrindod Wells.
- 3.2 The Regional SMR currently has no record for the Old Mill, or any associated features or structures.
- 3.2 The earliest available cartographic evidence for the area is the Tithe Survey of 1840 for Merthyr Cynog parish (Fig. 2). A building is depicted on the site of the present mill and a faint line may indicate the leat feeding from the river to the east. It is not possible to determine whether this is the existing mill, or an earlier structure. At this time the plot (No 1004) is recorded as Mill house and garden, in the ownership of Revd Thomas Vaughan and let to Daniel Watkins.
- 3.3 The Ordnance Survey Surveyors' Drawing of 1809-36 (Fig. 3) shows several buildings in the vicinity of the mill, although it is not possible to determine whether the mill itself is depicted.
- 3.4 The earliest detailed mapping of the area is provided by the Ordnance Survey 1st edition 25" series (Fig. 4), surveyed in 1886 and published in 1888. This clearly shows the water mill, with the drying kiln at the western end (see below), together with the head race leading off the Ysgir Fawr at a weir c. 400m to the east (SO 00073411). The weir has since been breached although its position can still be identified, while the head race can be traced as an earthwork.
- 3.5 The Ordnance Survey 2nd edition 25" series (Fig. 5), revised in 1903 and published in 1904 shows the mill building and head race as on the earlier edition, but with the addition of a saw pit adjacent to the leat approximately 20m to the east of the mill.
- 3.6 Information provided by the owner revealed that the mill was originally powered by an over-shot wooden waterwheel, and ground wheat for flour, together with oats and barley for animal feed. Deeds show that the mill was in the ownership of the Williams family from at least 1876 until 2000, when it was sold to the present owner. Corn was last ground in 1950, after which the wheel fell into disrepair and was dismantled to be replaced by a cup turbine, or Pelton wheel. The launder feeding the waterwheel was replaced by a small reservoir fed by the original leat. There is a reference to water being supplied by an iron conduit (Bowen 1987, 29), although it is not clear whether this was an original feature, or perhaps more likely installed along with the turbine. However, the water supply from the reservoir proved to be insufficient to power the turbine for any practical period of time and, although subsequently used for powering a saw, by 1960 the mill was disused and the leat silted.

3.7 There are two former mill stones now used as ornamental flower beds outside Mill House. Both are French burr stones, probably dating from the late 19th century. The last surviving mill stones were removed from the mill relatively recently.

4 BUILDING SURVEY (Figs 6-7)

- 4.1 The building survey was undertaken in accordance with the broad specification for a Level 3 Survey set out by the Royal Commission on the Ancient and Historical Monuments of England (RCAHME 1996). This included the following: a written description of the structure; full internal/external photographic survey using 35mm format colour slide, colour and black and white print; plans and elevations of each floor and facade. Details of the Site Archive are provided in Appendix 2.
- 4.2 The survey was undertaken over a three-day period between 26 and 28 September 2000. The majority of the elevations and internal detail was recorded digitally, using a Leica TCR 305 Reflectorless EDM in conjunction with Penmap survey software, with hand measurement to record additional detail. The survey data were subsequently processed using AutoCAD13 to produce the final plans and elevations. The survey data are stored in digital format (see Appendix 2).
- 4.3 The mill consists of a main building constructed in random stone with a slate roof and has been built against the natural slope of the valley side so that the entrance on the north side is at first-floor level, while that on the west side is on the ground floor. Overall, the building measures 11.4 x 6.1m externally with a maximum height of 9.5m to the apex on the east side.

4.4 North elevation

4.4.1 The north elevation contains the main entrance, which is a single wooden door with simple frame and timber lintel. There are two windows at first-floor level, both with timber lintels and stone sills, with a ground floor window just above ground level at the east end. The ends of three beams supporting the second floor are visible projecting through the wall. A drying kiln adjoins the west end, also constructed in random stone with a slate roof. A joint in the masonry indicates that this was a separate construction to that of the main building. A ventilator occupies a central position along the ridge of the drying kiln, constructed in timber with timber cladding on the north side, slate on the east and west sides and boarding on the south side.

4.5 West elevation

4.5.1 The west elevation shows the drying kiln with a simple window at first-floor level with a timber lintel and stone sill. The main mill building has an entrance on the ground floor consisting of a simple wooden door and frame with timber lintel. There is a single window at second-floor level, offset slightly to the south, consisting of a wooden frame with timber lintel and stone sill. The offset position of the window reflects the position of the drying kiln, suggesting that either it is a later insert, or that both the window and the kiln were part of the original construction, even though the kiln has clearly been built separately from the main building.

4.6 South elevation

4.6.1 The south elevation shows the entrance to the drying kiln, consisting of a plain timber door and frame with timber lintel. The main mill building has three windows, two on the ground floor and one on the first floor, none of which retain any glazing. All have timber lintels and stone sills, although the eastern ground floor window is now without a sill. There is also a small slit window at the eastern end of the ground floor and a flue pipe, presumably for a stove on the ground floor which has since been removed. The wheelpit lies at the east end of the mill, originally 1.5m wide and at least *c*. 2.1m deep, of random stone construction with later brick walling inserted on either side to support the turbine mounting.

4.7 East elevation

4.7.1 The east elevation provides some evidence of structural and mechanical changes to the mill. The ground floor contains the wheelpit, which has at some time been reduced in length by the construction of the reservoir retaining wall for the later addition of a turbine, replacing the waterwheel. The turbine reservoir is revetted in random stone standing to a height of up to 6.5m. The axletree window survives, consisting of an irregular doorway 1.8 x 0.8m with a stone lintel, evidently enlarged when the turbine was installed. A small drain in the lower south side of the elevation runs from the pit-wheel

pit (see below). The upper half of the elevation is largely of lap-board construction, within which are three windows, all with timber frames. The upper, second floor window is centrally placed, with two first-floor windows abutting the north and south walls respectively.

4.8 Ground floor

- 4.8.1 The ground floor retains a number of original features although the milling machinery has been removed. At the east end a number of structural features survive relating to the original layout of the milling machinery, including the pit-wheel pit and timber supports and mountings for two pairs of stones. When the waterwheel was in situ, the power would have been transferred into the mill via the axletree, a substantial timber shaft forming the axle for the waterwheel, which entered the mill via the axletree window. The axletree survives, although it has been moved (see below), measuring 3.5 in length and 0.45m diameter. The axletree connected to a vertically bevelled gear wheel on the interior, known as the pit wheel, which revolved within a small wheelpit cut into the floor of the mill. The small drain visible in the east elevation removed any water which may have entered the mill via the axletree window. A system of gears would then have transferred power to the mill stones on the floor above. A bevelled pinion known as the wallower transferred power from the pit-wheel to the vertical main shaft which would have extended through to the top of the first floor. Attached to the main shaft was a large horizontal gear wheel called the spur wheel which in turn drove the pinions, or stone nuts, which turned the millstones directly above (Davies 1997, 90 and 102).
- 4.8.2 The surviving timbers indicate that the mill originally had two pairs of stones, probably one for grinding flour and the other for animal feed. The northern pair survived in situ until recently. Two large upright timbers supported a horizontal timber, which has now fallen partly into the pit-wheel pit, on which the stone nut would have been mounted (plate 7). The west end of the timber was attached to an iron support to raise or lower the upper stone. The timbers supporting the stones survive in situ. The supports for the southern pair of stones have been removed, although the vertical timbers survive (plate 8).
- 4.8.3 The remains of the turbine now lie in the wheelpit (plate 6). The turbine mounting survives in situ supported on two brick walls constructed on either side of the wheelpit. The mounting bears the makers name: Joseph J. Armfield & Co Ltd, Engineers, Ringwood.
- 4.8.4 A flight of stairs along the north wall originally led to the first floor, although they no longer survive.
- 4.8.5 The west end of the mill, together with the drying kiln, has been modified for use as a cattle byre, the original flagstone floor having been removed and replaced with concrete, including a manger and drain. The former axletree has been used to form the east side of the byre (plate 9). A number of iron bolts are visible in the drying kiln wall which presumably supported the drying floor at first floor level. A fragment of a clay tile now outside the mill suggests that the drying floor was originally composed of perforated tiles. There is now no evidence relating to the firing of the kiln.

4.9 First floor

- 4.9.1 The first floor, or 'stone' floor, originally had two pairs of stones, as noted above, although there is now nothing surviving at this level which relates to the southern pair of stones. The setting for the northern pair survives, although the stones themselves have been removed (plate 10). The trap doors for the sack hoist survive, as do the open stairs leading to the second floor. The stair leading to the ground floor have been removed although the opening remains together with the hand rail around two sides.
- 4.9.2 The drying kiln, which has been refloored, is open to the roof and retains the ventilator set centrally on the ridge of the roof.

4.10 Second floor

4.10.1The second floor is open to the roof and is divided into four bays by three roof trusses. The access is via an open wooden staircase from the first floor. The sack hoist, which was supported between two trusses (plate 4), has been removed recently, although the trap doors survive.

5 CONCLUSIONS

- 5.1 The desk-based study has demonstrated that a mill stood on this site as early as 1840, although it is not possible to determine whether this was the existing mill or an earlier structure. The site itself, however, shows no indication that there may have been an earlier mill and from the manner of construction it would seem probable that the present mill dates from the earlier part of the 19th century.
- 5.2 At the time of the survey the mill retained a number of original features, although the internal machinery and mill stones had all been removed. The building itself appeared to be in relatively good condition and structurally showed little evidence of external alterations, with the exception of the turbine reservoir which had been built over the northern end of the wheelpit. The mounting for the later turbine survives in situ, although the turbine itself now lies broken in the base of the wheelpit. Internally, the building itself has been largely unaltered since milling ceased, apart from the conversion of the west end of the ground floor into a byre and the reflooring of the drying kiln. It is, however, unfortunate that none of the milling machinery survives.

6 ACKNOWLEDGEMENTS

6.1 The author would like to thank the following for their help and assistance: Wendy Owen, CPAT, for undertaking the desk-based study; Jenny Mitcham, SMR Officer, CPAT; the staff of the National Library of Wales, Aberystwyth; the staff of the National Monuments Record, Aberystwyth; the staff of Powys County Archives, Llandrindod Wells; the owner, Mr J Parsons; Nigel Bayford, Leica Geosystems.

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Vince, J, 1993. Discovering Watermills. Shire Publications Ltd.

Cartographic sources in National Library of Wales

Tithe map and apportionment for Merthyr Cynog parish, 1840

Ordnance Survey Surveyor's drawing No 196, surveyed 1809-36

Merthyr Cynog Enclosure Award 1865, Brecon Q/RA/15

Tredegar Estate Vol 5, map 37, 1868

Ordnance Survey 1st edition 25" Breck. 21.15, surveyed 1886, published 1888

Ordnance Survey 2nd edition 25" Breck. 21.15, revised 1903, published 1904

APPENDIX 1

THE OLD MILL, PONT FAEN, BRECON SPECIFICATION FOR AN ARCHAEOLOGICAL BUILDING SURVEY BY CLWYD-POWYS ARCHAEOLOGICAL TRUST

1 Introduction

- 1.1 The proposed development (planning application B97/0204) involves the conversion of the Old Mill, Pont Faen, Brecon, into a dwelling.
- 1.2 The Curatorial Section of the Clwyd-Powys Archaeological Trust in their capacity as archaeological advisors to the local planning authority, have determined that a building survey is required in advance of the development being undertaken. Accordingly a brief (No ASB 387 dated 29 June 2000) has been prepared by MJ Walters, which describes the scheme of archaeological works required.

2 Objectives

- 2.1 The objectives of the survey are:
- 2.1.1 to reveal by means of a combination of desk-based assessment and building survey, the nature, condition, significance and, where possible, the chronology of the archaeology within the area of the proposed development in so far as these aims are possible;
- 2.1.2 to record and describe all key elements of the milling structure and its internal and external machinery;
- 2.1.3 to prepare a report detailing the results of the survey;

3 Methods

- 3.1 Stage one of the evaluation will involve the examination of all the readily available primary and secondary documentary, cartographic, pictorial, photographic and oral sources. Repositories consulted will include the following: County SMR, CPAT, Welshpool; the National Monuments Record, RCAHMW, Aberystwyth; the National Library of Wales, Aberystwyth; Powys County Archives, Llandrindod Wells
- 3.2 Stage two will take the form of a building survey in accordance with the broad specification set out in a RCAHM Level S Survey. This will include: a written description of the structure; full internal/external photographic survey using 35mm format colour slide, colour and black and white print; plans and elevations of each floor and facade.
- 3.3 Following the on-site work an illustrated and bound report will be prepared according to the principles laid out in the Curatorial Brief. This will be in A4 format and contain conventional sections on: Site location, Topography and Geology; Historic Background; Building Survey; Conclusions and Recommendations and References, together with appropriate appendices on archives and finds. A draft report will be sent to the Curator and Client prior to the production of the final report.
- 3.4 The site archive will be prepared to specifications laid out in Appendix 3 in the <u>Management of</u> <u>Archaeological Projects</u> (English Heritage, 1991).

4 Resources and Programming

- 4.1 The evaluation will be undertaken by a small team of skilled archaeologists under the direct supervision of an experienced field archaeologist, who will also be responsible for undertaking the desk-based assessment. Overall supervision will be by Nigel Jones, a senior member of CPAT's staff who is also a member of the Institute of Field Archaeologists.
- 4.2 All report preparation will be completed by or with the assistance of the same field archaeologist who conducted the evaluation.
- 4.3 It is anticipated that the assessment and evaluation will take no more than 5 days in all and that the subsequent report would be prepared immediately thereafter, dependent on the client's instructions and the arrangement of a suitable timetable. The date of commencement, at the time of writing, has yet to be agreed with the client, and will be dependent on the state of the site and negotiated access. The archaeological curator will be informed of the detailed timetable and staffing levels when agreement has been reached with the client.
- 4.4 Requirements relating to Health and Safety regulations will be adhered to by CPAT and its staff.
- 4.5 CPAT is covered by appropriate Public and Employer's Liability insurance.

N.W.Jones 10th August 2000

APPENDIX 2

SITE ARCHIVE

Digital data:

Penmap surveys, drawings Mill00.pts Mill1.pts Mill1st.pts Mill2.pts Mill2nd.pts Mill3.pts Mill4.pts.pts Mill5.pts

AutoCAD13 drawings 1stfloor.dwg 2nd floor.dwg ground.dwg eelev.dwg nelev.dwg welev.dwg selev.dwg elevatio.dwg plan.dwg

Mapinfo tables elevation.tab joists.tab plan.tab

Photographs

black and white negative films, contacts and archive prints, film no. 999
colour print films, film no. CS00/51
colour slide films, film no. 1001
photographic catalogue

Correspondence



Fig. 1 Site location. Scale 1:2,500

Page 10

CPAT Report No 396, 04/10/00



Fig. 2 Tithe Survey of Merthyr Cynog Parish, 1840



Fig. 3 Ordnance Survey Surveyor's Drawing 1809-36



Fig. 4 Ordnance Survey 1st edition 25", 1888



Fig. 5 Ordnance Survey 2nd edition 25", 1904



Fig. 6 Building elevations, scale 1:100

.

Second floor

First floor



stairs down

sack hoist



CPAT Report No. 396, 04/10/00

Ground floor



Plate 1 North elevation including drying kiln. Photo CPAT 1001.3



Plate 2 View of Mill and Mill house from SW. Photo CPAT 1001.24



Plate 3 West elevation showing drying kiln. Photo CPAT 1001.6



Plate 4 Second floor interior showing sack hoist. Photo CPAT 1001.10





Plate 5 East elevation. Photo CPAT 1001.28



Plate 6 Remains of turbine and wheelpit. Photo CPAT 1001.29



Plate 7 Stone nut mounting for northern millstones. Photo CPAT 1001.35



Plate 8 Position of former stone nut mounting for southern millstones. Photo CPAT 1001.33



Plate 9 Former axle tree. Photo CPAT 1001.36



Plate 10 First floor interior: setting for northern millstones. Photo CPAT 1001.12