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TIR GOFAL MANAGEMENT PLAN: HERITAGE MANAGEMENT INFORMATION (Call Out)

Prepared for: Castell Martin



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INTRODUCTION AND OBJECTIVES

A call out visit to Castell Martin was requested by the owners, who want to undertake restoration on two traditional buildings at the farmstead. The owners want advice on repairing a collapsing gable end, and also replacing doors and windows on both traditional buildings. The aim of this report is to make an assessment of these issues in order to provide management recommendations to be incorporated into the Tir Gofal Management Plan. This report is not intended to assess the structural condition or stability of any given site.

The Call Out Report responds to management concerns regarding specific sites, it does not provide management advice for all known sites on the farm, for these recommendations please refer to the Historic Environment Report 1 (He1).

Castell Martin farmstead is sited on an east-facing slope, which runs down to the river Teifi. It is marked on various historic map sources, including the Old Series Ordnance Survey of 1831. The first edition shows the farm in sufficient detail to identify three separate buildings arranged around three sides of a square yard; a layout that has survived unchanged until the present day. The layout incorporates the farmhouse on the western side of the yard, with two single-story outbuildings, which are aligned east – west (across the contour of the slope), on the north and south sides of the yard. The farmhouse itself was modified substantially during the later twentieth century; but the traditional buildings have survived, in close to their original form. Appropriate and sympathetic maintenance will help ensure their future survival.

The management priority for the buildings at Castell Martin farm is the repair of the western gable-end of the southern outbuilding.

THE SOUTHERN OUTBUILDING

The building at the southern end of the yard is constructed of rubble-stone, with a slate roof. The western gable-end of this building is collapsing. It is built into the hillside, and therefore acts as a retaining wall for half of its height. There is a doorway at second story level (ground level on the outside of the building), which may have afforded access to a former loft, and could have been used as a loading door for carts after the loft was removed.



Doorway in western gable-end, showing area of collapsing stonework to right.

The lower and upper sections of the gable-end have slumped, and are now bulging precariously into the building. To the north of the building, a continuation of the west gable-end wall forms a retaining wall for the hillside. The farmhouse is built on the slope above the outbuilding, that this north-south wall retains.



Low cart entrance at west end of southern outbuilding, showing retaining wall to right of the picture.



North elevation of southern outbuilding, looking west towards farmhouse

On the northern elevation of the building are two doorways of standard width and one window. At the west end, a low entranceway, wide enough to afford access for a cart, adjoins the collapsing gable end (this cart entrance may be a later addition to the building). All openings have wooden lintels.

The owners are unsure of the reason for the collapse of the gable-end. They have only noticed movement in the last few years, but are not aware of any changes in activity in the vicinity that could have caused this.

The most likely explanation is that the wooden lintel above the cart entrance has become rotten where it enters the retaining wall. The lintel now slopes down towards this point, above which is a stress crack running vertically through the stonework. The place where the gable-end/ retaining wall meets the north wall of the building has been particularly susceptible to water penetration. This is further evidenced by pronounced deterioration of the lime mortar between the stonework in this area, and the absence of lime wash. (There was formerly a coat of lime wash on at least the northern exterior wall of this building - it is still extant on parts of the north elevation).



Detail of deterioration on northwest corner of southern building

Examination of the roof of the building may reveal a further contributing factor to the collapse of the west gable-end. When viewed from the inside, it is apparent that the apex of the roof has shifted eastwards (longitudinally) with relation to the building. The rafters lean to the east, so that the points at which they meet at the apex are no longer directly above the point at which they meet the wall tops, a process known as 'racking'. Racking must have occurred prior to the current slates being hung, as these are laid with joints running vertically, compensating for the angle of the roof timbers. The present slates are relatively un-weathered, confirming that they were hung more recently. Although they currently extend to cover the western gable, the evidence suggests there may have been a period of time when the top of the gable was exposed to the elements. It is possible that the building was originally thatched, however, no direct evidence was found for this at the time of the call out visit.

Apart from the problems discussed above, the remainder of the southern building appears to be in a reasonable condition, although a vertical crack on the eastern gableend may be a precursor of further instability.

The building is now used for storage, and occasionally houses livestock. Surviving internal partitions suggest it was used for livestock in the past. It may also have had crop processing and perhaps storage functions, evidenced by the first edition Ordnance Survey map of 1889, which shows a dashed circle to the rear (south), indicating the presence of a horse gin. The horse gin seems to have fallen out of use by 1905 (the dashed circle is no longer marked on the second edition OS map). The owners have noted a hard surface surviving in this area, and a hole is still extant on the southern wall, through which the winding gear would have driven internal machinery (probably for threshing). The hole still has an iron rod running through it, although it is unclear whether this is part of the historic machinery.

There is evidence that part of the building at least, was lofted. Rounded timber joists that could have supported a floor are still extant at the western end, one of which has been sawn off where it enters the wall. If the building was lofted when it was first built, the doorway in the western gable may have been positioned to afford access to the loft.

Recommendations

Repair of the western gable-end is the priority at Castell Martin, if the southern outbuilding is to remain weatherproof, and ultimately survive.

The timber lintel should be replaced, to help stabilize the north wall. The western gable-end wall will almost certainly require rebuilding. In order to retain the historic integrity of the barn, rebuilding should be done using appropriate materials, ie. stone of local origin, lime mortar, and a lintel which matches the original.

Cambria Archaeology cannot advise on the structural stability of the building, or the stability of the hillside. However, a stone and lime mortar wall may not be deemed sufficient to prevent future collapse. Advice should be sought from a structural engineer on this matter. It may be possible for retaining work to be incorporated behind the wall of the traditional building, so that it does not affect the method of construction used for the wall itself.

THE NORTHERN OUTBUILDING

The owners are keen to replace doors and windows on the building on the north side of the yard, to make it more secure for storage. The building is single-storey, of rubble-stone construction, with remnants of limewash on the south-facing exterior wall.



The northern outbuilding viewed from the southeast

Both gable-ends of the building have long narrow ventilation slits. At the western end the slit is at ground floor level, whilst the eastern end has a ventilation slit at second story level in the gable. The difference in height may have been to accommodate two small walled enclosures, which are attached to the east end of the building. Although now reduced to low walls, a row of projecting flat stones at first floor level on the eastern gable-end suggests that the enclosures were formerly roofed. These enclosures appear to be the remnants of former pigsties.



Two small walled enclosures at the eastern end of the northern outbuilding

The western gable has a further small, rectangular opening above the ventilation slit, at second story level. This is not easily interpreted, but may represent a crude opening to allow owls into the barn to kill vermin.



Small opening in the western gable, which may be an owl-hole

The northern elevation (facing away from the yard) has two doorways at the western end, and a window opening at the eastern end. Again, all have wooden lintels. The most westerly opening has a wooden plank stable-type door (ie. the top and bottom sections may be opened separately). The second door is of a single piece, of wooden plank construction. The appearance of both these doors and their fittings suggest that they may be original.

There are some over-mature trees to the north, which may threaten the building if they were to collapse.

On the southern elevation, facing the yard are two sets of window and door openings, all of which have timber lintels. The window openings are currently glazed, although this may not be an original feature on an outbuilding such as this. The present windows are of different types (the western one has a metal frame), and are certainly not original. However, if possible it would be preferable to retain the metal-framed window, as it is indicative of the historic development of the building. Mild steel windows were produced from the First World War to the 1970s. Synonymous with the dominant manufacturer, Crittall, they exist in a wide variety of styles and standard sizes (SPAB technical advice sheet 'Metal Windows' March 2002).



Detail of metal-framed window on southern elevation

Forming the southeast corner of the building, are a number of large, neatly dressed stone flags, which are not typical of the remainder of the stonework evident in the building. These flags seem to have been used to consolidate a collapsing corner, and appear more appropriate for flooring than wall construction. The obvious conclusion is that they were re-used from a floor; although the flags show no major signs of wear consistent with this use on the exposed faces.



Detail of southeast corner showing stone flags

The original function of this building is unclear, however, on a small farmstead such as this it may have been put to numerous uses. Several features suggest that at least part of the building was used as a dairy in the past. Dairies often had flagstone floors, used to ensure a cool temperature within the building. The flags, which form the southeast corner of the building, may have originally been part of a flag floor. The internal walls of the building are lime washed (in contrast with those in the southern building, which are bare). Lime washing was a traditional method of sanitising the inside of a building, due to the mildly antiseptic properties of lime.

Dairies also needed to be well ventilated, and were often cross-ventilated by shuttered windows without glazing. There are ventilation slits at either end of the building, and the window openings may well have been shuttered with slatted wood prior to the more recent addition of glazing.

The former pigsties attached to the down-slope (east) end of the building further support the possibility. Pigsties are often found associated with dairies, as traditionally in the dairying process, after the cream was separated from the 'whey' (watery skimmed milk), the whey was fed to pigs.

Recommendations.

Although the locations, shapes and sizes of the majority of openings on this building appear to represent the original arrangement, not all window and door fittings are original. Where replacement has occurred it is difficult to specify appropriate fittings, as the original function of the building is unclear.

If the building was used as a dairy, as suggested above, the window openings were probably shuttered prior to the addition of glazing. Wooden shutters without glazing may be the most appropriate option for the window openings. Wooden shutters would also provide greater security on the building.

Both doors on the northern elevation appear to be original, but are in need of refurbishment and repair. The existing doors could be upgraded to provide better security. Wherever possible, original parts and fittings should be retained, and replacement should be a last resort. Even where there has been substantial damage, it may be possible to splice in new parts rather than replacing the entire door. Where replacement is unavoidable, it is important that original materials are matched, and appropriate joinery is used.

Removal of overhanging branches and limbs from the mature trees to the north of the building should be undertaken, in order to protect it from damage during high winds.

Traditional buildings such as these require ongoing maintenance in order to prevent general deterioration of materials, which eventually causes structural failure. Traditionally, lime wash was used for, amongst other things, protecting the surface of exterior walls. Regular applications help protect lime mortar between the joints, and prevent damp penetration. However, although lime was widely available, lime washing entire buildings was sometimes considered unnecessary, or too costly. In these instances walls were left exposed, and only the most visible surfaces were coated. It should be noted that evidence for lime wash on the exterior walls of the traditional buildings at Castell Martin was confined to the walls facing the yard. Coats of lime wash should be re-established in places where there is a historical precedent. In areas where no precedent exists, repointing may be necessary. Lime mortar between the joints should survive well as long as it is regularly checked and maintained. However, as it is not as hard as cementitious renders, it does eventually erode, at which time it needs replacing (see enclosed SPAB technical advice sheet on re-pointing)

REFERENCES

Maps

Ordnance Survey Old Series, Sheet XLI, 1831 Ordnance Survey 1st. Ed. Cardiganshire (25" to 1 mile) Sheet XLI.13; 1889 Ordnance Survey 2nd. Ed. Cardiganshire (25" to 1 mile) Sheet XLI.13; 1905

Other Sources

Society for the Protection of Ancient Buildings (SPAB) technical advice sheets <u>www.spab.org.uk</u>: 'Metal Windows' March 2002 'Repointing' December 2002

Useful contacts

Society for the Protection of Ancient Buildings (SPAB)www.spab.org.ukCharity No. 23130737 Spital Square, London E1 6DYtel. 020 7377 1644fax 020 7247 5296

Documents included

Society for the Protection of Ancient Buildings (SPAB) technical advice sheets: 'Repointing' December 2002

Extracts from

Ordnance Survey 1st. Ed. Cardiganshire (25" to 1 mile) Sheet XLI.13; 1889 Ordnance Survey 2nd. Ed. Cardiganshire (25" to 1 mile) Sheet XLI.13; 1905

TECHNICAL ADVICE Q&A 11

Repointing

The SPAB has recently brought out a revised edition of one of its best-selling publications, Technical Pamphlet 5 on repointing. Ideas on what constitutes good practice have advanced over recent years. Douglas Kent, the Society's Technical Secretary, focuses the central issues.

Q. What is repointing and why does it demand care?

A. Repointing is the process of taking out and replacing the mortar ('pointing') from the face of a masonry joint. Done properly, this helps exclude the weather and retard deterioration of the wall. Regrettably, repointing is commonly undertaken unnecessarily or unsatisfactorily. Unnecessary repointing, however carefully done, risks damage to the edges of bricks or stones, as well as the loss of valuble clues to a building's construction and history. Unsatisfactory repointing can not only be visually disturbing, but harmful to the actual fabric it is intended to protect.

Q. When is repointing necessary?

A. Repointing is premature until mortar has weathered back to a depth equivalent to the joint width or is very loose. The lime mortar used for old buildings is more permeable than the brick or stone, concentrating frost and salt action in the joints. Unlike hard cementitious pointing, this protects the masonry units because the mortar erodes in preference (in other words, is sacrificial). Irregular weathering means only localised repointing is usually required. Repointing is not justified simply because mortar is soft.

Q. Should I remove inappropriate hard cementations pointing?

A. The routine use of weather-struck cement pointing in old buildings is a common mistake. Not only is it disfiguring, but it leads, more seriously, to faster deterioration of bricks and stones as they become the most permeable part of the wall and suffer the greatest frost and salt action. Removal should only be attempted if a trial indicates this can be achieved without further damage. Otherwise, the pointing is best left to work loose.

Q. Should I normally match the existing pointing?

A. Almost always if possible, the principal exception being where inappropriate repointing has taken place. Old pointing is often best observed in sheltered areas, such as under eaves, and should be matched in terms of material and finish.

Where it is necessary to design a new mortar mix instead, this must be weaker than the bricks or blocks and take into account site exposure. If in doubt about the joint profile, a flush or nearly flush finish is frequently appropriate.

The production of mortar samples and trial panels is strongly encouraged.

Q. What pointing mortar might be suitable?

A. The binder (which should usually be lime, not cement) and aggregate (generally sand) are selected to ensure the existing mortar is matched in colour, texture and strength. In most cases, existing mortar can be adequately assessed from visual inspection coupled with local knowledge.

A weak hydraulic lime binder was preferred historically for pointing, but, if unavailable, purer local, non-hydraulic lime was used (sometimes with brick dust or another 'pozzolan' to compensate). Recently, cement has been added to modify lime mortars, but this is discouraged now a wider range of limes is obtainable.

The local aggregates used historically varied widely. Frequently, however, a wellgraded sharp sand would be suitable. The largest particle size should not exceed onethird of the joint width.

Q. What joint finish might be suitable?

A. Unless a specialised form of pointing exists, a flush or nearly flush finish will often be sympathetic. Many now favour finishing joints with a fuller profile than in recent years, following historical precedent and providing better protection to the wall. Consequently, recessed pointing, particularly with stonework, may soon be considered a late-20th-Century fashion. Sometimes, though, there may be a case aesthetically for pressing the mortar back, as when repointing very localised areas or where bricks and stones have heavily eroded edges and joints would otherwise appear excessively wide.

Q. How do I minimise the risk of pointing failure?

A. A high proportion of failures occur because adverse weather is ignored. Where possible, avoid repointing in winter. Whatever the time of year, ensure new work is adequately protected from frost, rapid drying (by the wind or sun) and rain. Poor preparation also causes failure. Existing mortar should normally be raked out to a depth equivalent to twice the joint width (and deeper with wide joints).

Further Reading

SPAB (2002) <u>Repointing Stone and Brick Walling</u>, SPAB Technical Pamphlet 5, London: SPAB