

it is often necessary to interpret potentially complex structures on a visit of one or two days duration. For many buildings, documentary evidence is either non-existent or inaccessible, leaving the buildings themselves as the primary record. Careful analysis of the fabric often results in an appreciation of the original appearance, plan and function of the building, together with an understanding of the way the structure has been altered over time. This is essentially an archaeological approach, an exercise in piecing together the evidence represented by the existing plan form, scale, fittings, mouldings, decoration and so on in order to gain a coherent overall picture of development. The understanding provided by this approach, however, may have important practical implications, influencing the way in which new work, or restoration, impacts upon a historic building.

On arriving at a building it is important to spend some time walking around the structure in order to get an initial impression. In so doing it is necessary to constantly compare what one is seeing against one's knowledge of standard plan forms for various building types and periods. An awareness of indicative features and the ability to identify these on site will provide important clues about what to look for. For the purposes of interpretation, an appreciation of the missing evidence is just as important as that which remains.

Much can be deduced on the basis of an external inspection alone. The illustration, below, of part of the courtyard at Stinsford House, near Dorchester, Dorset, exhibits evidence for



three major phases and numerous more minor alterations. The range in the centre, although extensively altered, is the earliest of the three, the evidence for this assumption being a blocked two-light mullioned window with traceried heads at first-floor level at the extreme right behind the scaffolding, and a blocked two-

centred opening low down near the left side of the range. The position of the latter is an indication that the ground level has been raised by at least three to four feet prior to the creation of four-centred openings at the present level. The blocked two-light traceried window is of an early type and *in situ*, an indication that the range probably dates from the early 15th century. Another blocked mullioned window at the far left of the façade and a reset Tudor rose motif alongside are also suggestive of a 15th century date. The higher rubble range to the right is later as it butts up against the right jamb of the earlier two-light window and there is a construction or straight joint marking the point where the range was added. Late perpendicular windows in the higher range indicate it was added in the 16th century. The range on the left of the photograph is later still, having ashlar walls and regular fenestration consisting of mullioned windows with recognisably 17th century mouldings.

An external inspection, however, can only ever give a partial impression and a detailed investigation of the interior is always required to obtain the fullest possible understanding of the structure. It is important to try to relate externally observable features to the plan, interior features of various dates and the likely sequence of circulation patterns. For example, the blocking of a wide shallow-arched doorway in the centre of the 15th century range at Stinsford House and its replacement by an offset narrower opening is at first sight puzzling. Internal inspection, however, reveals the presence of a massive stone smoke bay inserted in the 16th century so as to block off the earlier opening and necessitating the creation of a new doorway slightly to one side. In carrying out an investigation of the interior it is vital to get into the most inaccessible parts of the building such as roof spaces, basements and voids, as it is in these spaces that the best evidence for the function and development of the structure can often be found. It is also important not to read too much into the presence of a particular feature unless there is supporting evidence; early joints and types of roof truss, for example, can be used in archaic fashion over several centuries, and it is possible for parts of a building to be moved or reused.

Considerable thought should be given to the appropriate level of record for a particular building depending on its significance, state of preservation and the extent of proposed works. Finally the findings of the investigation should be presented so as to enable the reader of a report to follow the evidence upon which conclusions are based. Measured drawings, which can reveal variations in wall thicknesses and alignments imperceptible to the naked eye and other information about circulation patterns and the way buildings functioned, together with good quality, archivally-stable, photographs, should form part of the record as appropriate.

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Cockle's Bike Shop

A late medieval timber framed building

Historical Development

Cockle's Bike Shop has been a familiar place in the centre of Shrewsbury since the 1920s until its recent closure due to the retirement of the proprietor. The shop occupies the entire ground floor of two properties, 2 - 3 Milk Street, Shrewsbury which are in single ownership.

No 2 Milk Street is a Grade II* timber framed building in two distinct parts consisting of a three storey three bay front range built with a wide street frontage and a two storey one bay rear range. Timbers in the frame of the rear range have been dendochronologically dated to having been felled in the Spring of 1467¹.

Built on a medieval burgage plot, this rear part is the only remaining bay of a building which previously fronted onto Milk Street and which would have extended deeper into the site. The front bays were taken down to allow the existing front range to be built. This later range contains a passageway at ground floor level giving access to a yard at the rear.

The existing front range was originally two storey and dendochronological dating has suggested that this was built

around about 1566². Approximately 100 years later the roof was raised to create additional attic space and it was at this time that the three gables were built on the front of the roof.

Each gable has a three light window giving light into the attic which was probably used as a workshop. These windows have ovolo moulded oak mullions and leaded lights most of which contain their original glass. The glazed panels were carefully restored by Goode and Davies, local glaziers active in the field of conservation. The gables are decorated with curving braces forming a series of stylised heart shapes and quatrefoils. Faint traces of carved decoration were found on the only two remaining bargeboards to the gables, consisting of a stylised running vine leaf typical of the designs of the 17th century.

The front elevation at first floor level is close studded and this was repeated at ground floor level below a jettied first floor. The ground floor framing was removed to enlarge the floor area sometime before the late 18th century.

No further major modifications were carried out after this date with the possible exception of the raising of the ceiling in the main living room at first floor level when the sash windows were inserted in the 18th century.

The present owner's father carried out extensive alterations at ground floor level in the 1930s including the removal of a section of timber framed external walling at the rear of the shop. A new

100mm thick brick wall with a glazed roof was required to enlarge the sales area to the shop unit from which he sold bicycles, (hence 'Cockle's Bike Shop').

3 Milk Street is an 18th century brick replacement of a timber framed building and the outline of the steeply pitched roof of the former building can be seen on the gable of the adjoining building where a residue of the mortar flashing remains. A modern flat roofed extension was built by the present owner at the rear of the building in the 1950s.

Since the 1930s the buildings gradually fell into disrepair and the upper floors became disused. When Cockle's Bike Shop eventually stopped trading in 1993 the owner, Mr Michael Cockle who lives in Seattle, USA, decided to carry out a feasibility study to decide what to do with the building and began by commissioning a survey of the buildings.

During the measured survey of the property, the remains of a medieval shop front were recognised in the rear range overlooking what is now the yard in front of the Old Post Office Pub to the rear of the site. The shop front had been identified by J T Smith in the 1950sⁱⁱⁱ, but its presence was not widely recognised beyond academic circles.

There is evidence to indicate that there were similar shop fronts to both sides of the existing bay suggesting that there was an open space in front of the shop fronts. This tends to confirm that there were no buildings occupying the site of what is now the Pub yard or where the 18-19th century extension to the Pub now stands.

Immediately to the north of the site was the medieval Shearman's Hall, demolished in the 19th century but which would have stood on the site when 2 Milk Street range containing the shop was built. There is no evidence to suggest that any buildings stood where they now do on the land between these two buildings fronting onto Milk Street.

The design of the shop front and the form of its construction involves the extravagant use of large sections of oak involving much wasted timber and it would have been very expensive to produce. The medieval rear generally has very close similarities in its architectural form and method of construction with the Grade I listed 'Abbots House', on Butcher Row, perhaps Shrewsbury's most prominent medieval building. The archaeological evidence indicates the likelihood that the same firm of builders, if not the same team of joiners, were responsible for the construction of the two buildings (and others in the town of the same period)^{iv}.

Butcher Row is now, and would have been then, a very busy thoroughfare justifying at the time the expense of providing shop fronts of such costly design. The fact that such similarities exist in the Milk Street shop fronts would perhaps confirm that the open space just off Milk Street must have also been a busy thoroughfare when the rear range was built. That the shop front elevation is close studded, has a jettied first floor and the rafter feet on this side are scalloped, gives a further indication that the building was in a prime trading position.

Despite the draconian works carried out in the 1930s which also involved the removal of a very large chimney stack and fireplaces in the centre of the building, the real joy of this building is the manner in which it encapsulates the architectural development of Shrewsbury.

The alignment of the original building and the plot on which it stood relates to medieval burgaging developed to retain narrow street frontages due to the high cost of land fronting onto the street.

The increase in wealth of the town in the 16th century, resulted in wider frontages being acquired by wealthy merchants and buildings began to appear which reflected their increase in prosperity. The later frontage of 2 Milk Street is just such a building, with its close studded framing and its jettied upper floor.

The Proposals

For many years there had been a flat over the shop at 2 Milk Street and therefore planning permission was not required to retain this use. The attic remained unchanged in character since the roof was raised in the 17th century. To maximise the income potential of the building, a scheme to convert the upper floors of 2 Milk Street into two flats on the first floor and one at attic level was considered.

This scheme would have required planning permission and building regulation consent for a material change of use. It would also have resulted in the loss of valuable architectural features such as 17th century doors, and in the construction of protected routes and partitioning in the attic. It was considered that the partitioning in the attic would have been an intrusion into the openness of the attic affecting the character of the building in general and the attic in particular.

Fortunately the owner of the building agreed with this conclusion and it was decided to restrict the works to the repair of the building with improvements to the existing flat and retention of the attic as non habitable storage or workspace for the flat. This may seem to have been an opportunity lost to gain a regular further income from the building. The fact is that the additional flat would have resulted in an increased capital value of approximately £36,000 which was near to the cost of the conversion.

The upper floors of 3 Milk Street had been unused for many years and planning permission was required to convert the building back into domestic use. It would have been possible to shoehorn two flats into the first and second floors. However the cost of meeting the building regulation requirements for sound proofing of the floors and staircase walls and the intrusion into the historic fabric of the building led to a decision being taken to convert the two upper floors into a single flat.

The whole of the ground floor of the two buildings were repaired and maintained as a single shop unit. This is now occupied by Paint Magic who are franchisees of Jocasta Innes, the specialist interior decorator.

Repairs

Together with the rest of the building, the roof structure had fallen into serious disrepair. Purlins had broken, roof braces were missing and others were decayed beyond repair. The deflection in the purlins was so exaggerated and had occurred over such a long period of time that the rafters had 'bent' with the deflection. Where the purlins were judged to be sound enough to retain the temptation to level up the depression in the tiled coverings was resisted. Where new oak purlins had to be introduced the rafters needed to be cut on the line of the purlins to remove the bow in the timbers.

The existing roof consisted of hand made plain clay tiles torched onto tiling battens all of which was exposed in the attic. It was agreed with the owner that felt underlay would not be used as this would have been visible in the roofspace which would have adversely changed the appearance and character of the attic space.

Reclaimed materials were not used on the project. Where insufficient suitable tiles remained to cover a whole roof slope, new Keymer hand made clay tiles were used. The clay tiles were laid and torched onto new timber battens with lime:sand:hair torching. Thus the traditional construction and original appearance of the underside of the roof structure has been conserved, and remains a dominant feature of the interior of the building.

During the opening up of the roof structure, a large amount of straw was discovered in a void between the front and rear ranges confirming that at some stage the roof was thatched.

On the ground floor, the 1930s brick wall and glazed roof extension was in a seriously defective condition. It was decided to take this down. It was also decided to remove the large steel beam which had been inserted in the 1930s alterations to support the timber frame at first floor level following the removal of the timber frame.

After discussion with English Heritage it was agreed that the most appropriate form of construction to replace the steel beam and to form the new external wall to the building would be a new timber frame. The empty mortises in the existing beams and posts indicated where the original frame members had been and this evidence was used to reconstruct the frame.

When the brick and glass extension was removed, the oak framing to the shop front was found to be heavily decayed with wet rot and death watch beetle. The frame was repaired by piecing in new timbers to replace the worst decayed material. Archaeological evidence established that the shop front had



◀ *Front elevation
2 and 3 Milk Street*



*Medieval shopfront
before opening up* ▶



◀ *Medieval shopfront
after opening up*



Medieval roof undergoing repair

mutilated by the insertion of a casement window, the remains of the other had been removed in the work carried out in the 1930s. Sufficient evidence remained in the form of mortises and other features in the remaining timbers to enable the window to be remade and reinserted.

The timber frame to the front wall was in a particularly poor condition with many decayed studs, posts and rails which were repaired using locally felled green oak. Many of the infill panels in the close studding had been crudely made up in the 1930s with engineering bricks (with frogs) laid on their sides in 1:3 cement mortar. Gaps had opened up between the bricks and the timber frame members and it was agreed with English Heritage that these could be replaced with wattle and daub.

Where other panels were found to be defective or where they had to be removed for extensive repairs to the frame members, these have been reinstated using oak or chestnut cleft lathing and a daub of clay, cow dung, lime, sand and goat hair. Where the panels had hazel twig laths these were replaced like for like.

An analysis of the daub showed that the mix contained clay, soil, pebbles, dung, animal hair and straw. In some panels hay had been used probably as it would have been more pliable than straw and therefore more easily worked into the mix. The panels were re-daubed using a mix prepared in a mortar mill from materials obtained locally and the daub was finished with a skim coat of lime and then painted with an 'off white' limewash (dilute yellow ochre).

The primary ingredient of a daub mix is usually clay and soil reinforced by straw or hay and animal hair. It is by no means certain that the cow dung would have been introduced into the original mix intentionally as clay has the ability to produce a sound hardened daub without the addition of cow dung. After all cow dung had its own value as a fertiliser whereas clay had little value at all.

The creation of a stiff daub mix without the use of a mill must have been very hard work. It is possible that such mills would not have been widely available in a medieval town and other means may have had to be used to produce the necessary mix of the required consistency. The work of mixing the daub would have been made much easier if the ingredients were mixed together on the floor of a stable used for oxen, many of which would presumably have existed in the town. The action of the animals treading the mix would have been ideal for this purpose during which time of course dung would presumably have been introduced into the daub.

When repairs to the rear gable frame of the medieval rear range were found to be necessary, the 15th century wattle and daub infill panels were carefully removed and replaced upon completion of the repairs. The panels were retained with stainless steel pins before making good with daub and lime. In this way, as much as possible of the original structure has been retained.

The skilled craftsmen who were employed on the repairs, and who were all experienced in this type of work, contributed to the debate regarding the methods to be adopted, and the involvement of the workforce in this way helped to maintain a high level of morale throughout the project.

During excavations at the rear of the medieval range, foundations of a large external chimney stack were uncovered. These remains were recorded by an archaeologist who was retained to carry out an analysis of the building before and during the repair works.

Decorative Treatment

The familiar appearance of the many black and white timber framed buildings in the town is an important feature of Shrewsbury's character as a 'black and white' town which has developed for over a century and a half or more. The final appearance of the repaired building was the subject of a great deal of discussion with the local conservation officer (Mickey King), with English Heritage (Trudi Hughes) and other interested parties. It was agreed that it was important not to change the character of the building and thereby the character of the street scene in the vicinity by significantly altering the colour of the timber framing and infill panels.

Prior to the repairs, the timber frame was covered with a thick layer of black gloss paint which had contributed to the entrapment

of water and therefore the stability in the timber. The paint was laboriously but carefully removed. The existing oak was eventually finished with a mixture of boiled linseed oil and turpentine which drew out of the grain the residue of pitch which was applied in the last century. This resulted in a very dark brown colour which in contrast with the off white (diluted yellow ochre) limewashed infill panels has the appearance of being black.

New oak has been treated with a mixture of boiled linseed oil and turpentine with the addition of a very small amount of black and brown pigment to match the treatment of the existing oak frame.

Costs

The total cost of the project, including fees and VAT has been in the region of ½ million pounds offset by a section 3a grant from English Heritage. The work would not have been possible without the generosity of the owner, Michael Cockle, who was brought up in the flat over 2 Milk Street and who left to pursue a career in America 50 years ago. He has invested far more in this project than will ever be returned from rental income or increased capital value.

Credits

The works were directed by Pooks Chartered Building Surveyors (Peter Napier FRICS, who is an accredited chartered building surveyor, was the partner in charge assisted by Daron Lewis who was the project building surveyor).

The Quantity Surveyors were Bare, Leaning and Bare from Bath (Adrian Stenning, who is an accredited chartered quantity surveyor, was the partner in charge and Duncan Ball was the project quantity surveyor).

The repair works were carried out by I J Preece and Son Ltd., from Hereford who directly employed all the trades other than the M and E subcontractors. This helped to maintain a high degree of quality control on the site. (Andrew Pugh was the Site Agent).

Plastering works were carried out by Period Restoration (Richard Barrow) who recently undertook similar work at Plas Mawr in Conway.

Ironmongery was manufactured by John Hoare-Ward of Paul Dennis from Brecon and all the wrought iron from which the ironmongery was hand forged originated from the salvaged remains of the wrought iron from the roof of Windsor Castle.

The bargeboards were carved by Barry Davies of Llanrhaeadr ym Mochnant Near Oswestry, Shropshire.

ⁱ Madge Moran: *Vernacular Architecture* vol. 27 1996 pp 93-95

ⁱⁱ Madge Moran: *Vernacular Architecture* vol. 27 1996 pp 93-95

ⁱⁱⁱ J T Smith: *Shrewsbury – Topography and Domestic Architecture to the Middle of the Seventeenth Century* (unpublished MA thesis 1953)

^{iv} Madge Moran: *Vernacular Architecture* vol. 27 1996 pp 93-95

Visit to Wigmore Castle, Herefordshire

Considering the poor summer weather that preceded it, members of the Group were rewarded with a fine summer's afternoon visit to Wigmore Castle on 16th July 1998.

The Castle ruins, which are in the guardianship of English Heritage, date from mostly the 13th and 14th centuries. They are currently undergoing extensive consolidation, archaeological recording and investigative work, managed by English Heritage Major Projects Department. The main contract works were progressing on the day of the visit with members being able to see at first hand many of the processes quite unique to the consolidation and recording of monuments. It was quite obvious that the project was proceeding particularly well with close teamwork being the key to success. Capps & Capps, the main contractor, admitted that their job was so much easier given the full set of most detailed drawings produced under the direction of Bob Tolley of S T Walker & Partners, Architects.

A preliminary contract had been let to try out a number of repair techniques before tenders were invited for the main works, the latter being based on bills of quantities produced by Press and Starkey, Chartered Quantity Surveyors. Half way through the 2 year contract the forecast final costs were still well inside the

totally covered in ivy and other tree and shrub growth when tenders were invited. This in itself was a testament to the vast previous experience brought together by the team of consultants and contractors.

The works have included the removal of vegetation off the tops of the walls, maintaining it during the consolidation works and then replanting it. Expecting this to be a specialist item it was surprising to be told that one of Capps & Capps own operatives carries out this work under the direction of a consultant ecologist. A successful re-establishment of the earlier 'soft tops' was proof to it being done correctly.

For those involved mostly in work to historic buildings, it provided a valuable insight into the different approaches required when dealing with monuments. It also gave a heightened appreciation of many other aspects of this work, such as health and safety considerations when on site and when the property is to be opened up to the public. Certainly it is something that cannot be learnt from a text book!

Peter Rhodes



Section of ruin being recorded prior to consolidation works



Members looking at works in progress; 'soft tops' re-established

BUILDING CONSERVATION JOURNAL



THE ROYAL
INSTITUTION
OF CHARTERED
SURVEYORS

No. 20 Summer/Autumn 1998



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