

NEWSLETTER

Issue 35 March 2009



· INSTITUTE · OF · HISTORIC ·
BUILDING · CONSERVATION

WEST MIDLANDS BRANCH

DIARY DATES

BRANCH MEETINGS 2009

To follow in Newsletter 36. At present, quarterly meetings are targeted for June, September and November, and March 2010 (including AGM).

CHAIRMAN'S COLUMN

Dave Burton-Pye

PAST, PRESENT, FUTURE ...

For some strange reason I had thought that my term of office would expire at the last meeting/AGM and I was ready to hand over the reins to Philip Belchere. But I've only got two years under my belt and as convention dictates that it's a three year sentence I'm here for another 12 months. It did however give me a little time for reflection on just how long I've been closely involved with the branch and I think its probably 20 years since I first went along under the ACO aegis to join a group of colleagues at Much Wenlock for a memorable meeting that included a trip to the Priors House next to the Abbey. I recall a large hand made refectory table in the kitchen which had been built in situ (that would never leave the room as its finished dimensions far exceeded the width of the doors) and a wardrobe in the tower bedroom painted the same colour as the walls which was an interesting exercise in camouflage but could have been too much of a *trompe l'oeil* after a good bottle of wine.

There have been many memorable meetings in Shropshire since then and our visit to Ellesmere served as another reminder, were one needed, of what a wonderful county it is. But as far as administration goes it is all change over there – one county, one single unitary authority, and I did wonder what the implications for conservation will be as the new system beds in with what I understand are reduced staffing levels. Whilst there may well be opportunities and benefits from closer working as a team, it is an extremely large county and one wonders how colleagues will fare with such enormous areas to cover. Good luck and best wishes to you all - and indeed to any others who are looking over their shoulders and feeling insecure about their futures as the economic downturn bites hard. I know

that there are authorities where lower than expected settlements from central government are causing employers to look hard for savings.

In these circumstances, conservation can all too easily and mistakenly be seen as a luxury and an easy target. Yet perversely it may mean that for a little while at least the old maxim of "poverty the great preserver" once more holds true. Some authorities had engaged in a strategy of selling off land and buildings as a way of generating receipts, but with property prices still falling, the value of these assets has greatly reduced. If this means that they may now engage in a re-assessment of the cultural value and significance of buildings as opposed simply to (mis)calculating their monetary worth, it may be that their future is secured for a little longer.

My own experience of the reduction in planning applications is that the time formerly allocated to DC casework is now more productively focussed on those aspects of the job which formerly took a bit of a back seat and I imagine that many of you will also be taking this opportunity to "catch up".

Finally I want to take the chance to say a formal thanks to the other branch officers who organise things on your behalf and particularly to Philip Belchere who has stood in for me on several occasions now. And thanks to all who are able to attend the meetings – which makes our efforts worth while. We had another extremely good turnout at Ellesmere and I look forward to seeing as many of you as possible at our next event.

EDITORIAL

Our profession is acutely visual. Our eyes are our principal working tools. Feeding us with the raw data we need to evaluate. And we evaluate what we see through the body of technical knowledge that we have 'downloaded' through the learning process. So every picture tells a story. Or rather, every picture of a *building* has something to tell us. So I am using this editorial to present one or two of my own recent visual experiences.

Please turn the page

Feelthy Picture ...



Ooh! How NOT to repoint a C19 wall. Seen in Kidderminster this February.

Prefabs

Penetrating an obscure corner of Stafford for the purpose of park-and-ride (park car and ride bicycle) I discovered a surviving estate of prefabs. Most had new windows and cladding but one specimen survived reasonably intact. As follows:



Before



After

BRANCH MEETING

Day Theme :

ENERGY CONSERVATION & HISTORIC BUILDINGS

11th December 2008

The 11th December Branch Meeting took place at the Darwin Community Centre, off Frankwell, Shrewsbury, hosted by *Mike Eaton* and colleagues of Shrewsbury and Atcham BC. The venue was itself an historic building.

The laptop and projector were in good form, and we had three very interesting and informative casework presentations. Day theme was energy conservation and sustainability, with special regard to traditionally-constructed buildings. We heard presentations from *Carl Huntley* (Shrewsbury-based architect specialising in low-carbon and zero-carbon projects); and *Nicole Soloman* of the Marches Energy Agency who is running an international project for monitoring the energy performance of historic buildings.

We had two walkabouts. Before lunch we viewed the Mountfields Conservation Area in Frankwell. After lunch at the Anchor Inn (delicious vegetable curries!) we walked along the waterfront to visit the Shrewsbury Environmental Technology Centre in the converted Pump House. The Director of Marches Energy Agency gave us a guided tour.

Special thanks to Mike and his colleagues for running such an interesting day.

VIEW OUT OF THE WINDOW

11th December 2008

The Darwin Community Centre is part of a large and complex half-timbered building with a tall three-storey frontage to Frankwell. Access to the centre is through a coach arch which leads into a small courtyard flanked by a three-storey half-timbered rear wing, part of which contains the Centre itself.



Darwin Community Centre, Frankwell frontage

Substantial repair and conversion work took place about 30 years ago, with a ground-floor flat-roofed extension occupying part of the courtyard and providing a first floor sitting-out space, and an outshut kitchen extension at first floor level on the other side. Internally, a hall space had been created (or re-created) at first and second floor levels, with an assortment of trusses featuring much modification, many of the original timbers having clearly been recycled. There were chipboard panels between the rafters.

The gents – loudly banging door! – featured more old and recycled structural timber-work.

Views out of the window were on to the small courtyard and the paved flat roof, with neighbouring walls and roofs blocking any wider view.



The meeting room



From the rear balcony as we prepare to go on walkabout

SUSTAINABLE DESIGN

Carl Huntley, Architect

11th December 2008

Carl Huntley is Managing Director of Base Architecture, a Shrewsbury-based practice. His practice specializes in projects that 'design out' the consumption of non-renewable energy. Which consumption promotes global warming and pollution. It is necessary to change human behaviour to create an environmental equilibrium. This involves strikingly radical changes to existing lifestyles. Government is trying to drive the process by requiring 'Zero Carbon' by the year 2016. Base Architecture specialize in energy consumption issues rather than embodied energy matters.

Technology is on the way to providing many answers to the problem. For example, it is now possible to use landfill sites to 'breed' biodiesel fuel, converting liabilities to carbon alternative assets.

Prefabrication off-site is not a particularly good answer, even though it reduces – and promotes – waste re-cycling. It still requires energy consumption to transport on-site.

If you look at Part L of the Building Regulations, it is all about energy consumption, not about insulation as such. So it is possible to design 'zero carbon' schemes that meet Part L with little or no insulation. An important factor when it comes to buildings protected by Listing from inappropriate changes.

'Office from Home' project

This involved a single-storey office extension to the side of an existing mid-C19 three-bay house in a Conservation Area. The side extension was a 100% glazed box. It was connected to a converted cellar where the computers used by Base Architecture were installed. The heat from the computers provided basic space heating, rising as it did from the cellar. In addition, leaves on neighbouring trees shielded the glass conservatory box from excessive solar gain in summer. However, when these trees were leafless in winter, the box achieved solar gain.

The office space could be used comfortably for 8 months of the year without topping-up the heating. The glazed box also made a simple but aesthetically pleasing contemporary design contribution to an agreeable Victorian house retaining all its original frontage features.

'Barn Conversion' project

This was in Wales near Bulith Wells. A client wished to convert a farmstead – house and barns – into a rural retreat with residential accommodation that could be rented out for holidays. There was no connection to the National Grid, such a connection costing £25,000. For the investment of that amount, Base Architecture offered the client an independent 'zero carbon' energy system.

This involved a 'cocktail' of measures including:

- ❖ Wind turbine on a slope away from the farmstead feeding a battery pack;
- ❖ Array of external solar panels;
- ❖ Heat pump working off a circuit in the ground under a reed-bed sewage system
- ❖ Glass box 'conservatory' air-warmer;
- ❖ Boiler fuelled by locally-coppiced timber.

This was backed up by rainwater storage and a 'grey water' system recycling bath water for toilet flushing.

The result was a 'Zero Carbon' installation that did not need any imported energy at all. Albeit subject to a Building Regulations condition that *only* wood from the coppice could be used in the boiler! Off-site wood would not, of course, attract 'zero carbon' rating.

'Enviro House' project

This was a purpose-designed single house. Orientation was due south, and it was recessed into the ground for good insulation. Glazed wings at east and west ends generated warm air through solar gain, which air was fed into the living space at the top of the house. Again, there was an array of solar panels and a heat pump operating in connection with a sewage system. The heat pump provided underfloor heating. Underfloor heating works through most of the floor area, so it does not need the high temperatures required by the conventional hot water radiator with its quite small surface area.

Malt House, Four Ashes Hall

This was the repair and conversion of a derelict malt house at Four Ashes Hall (viewed externally by Branch members during their 16th October visit) to create a self-contained dwelling. All serviceable original fabric was repaired for continued use. New interventions were designed simply and used traditional materials (fabric). Bath fittings were very simple modern designs. Working with a traditionally-constructed building with Listed status, not that much could be done in the way of insulation. However, aerated lime plaster was used where possible, which did increase the insulation values.

In discussion, it was pointed out that repair, maintenance and replacement costs needed to stand

part of the budget for effective 'zero carbon' operation. Power from photo-voltaic panels is used to power heat pumps, which use refrigerator technology, albeit in reverse. There are two kinds of heat pump circuit, one being more efficient than the other. Single glazing can be used as part of a 'zero carbon' installation. Carl's basic thesis is that enough energy supplied by 'zero carbon' methods means that it is not necessary to import damaging insulation into a Listed building.

SUSTAINABLE ENERGY COMMUNITIES IN HISTORIC URBAN AREAS

Nicole Soloman, MEA
11th December 2008

This is an EEC-funded project. The basis is to select individual historic buildings and record their energy performance. These records will then be used to identify means of improving their energy efficiency, preferably by measures that can be widely-adopted without causing material damage to architectural and historic interest. Some case study buildings have been chosen in Shrewsbury, including public, private, commercial and residential properties – the last including a mixed-character Conservation Area street.

One interesting case study building is St Alkmund's Church. It features a large array of photo-voltaic panels on the roof. These panels can be used because they are out of public sight behind a parapet and so readily received planning permission.

Whilst 'zero carbon' energy meant that no insulation was necessary, it remained desirable to use some insulation, at least in the interests of reducing demands on the power sources. A Listed dwelling house in Wales with external slate hanging had been effectively insulated externally by installing panels between the wall face and the slate hanging, backed up by loft insulation and a low-down wood pellet stove feeding heat into the house higher up.

MOUNTFIELDS CONSERVATION AREA

11th December 2008

The Mountfields CA was chosen for walkabout because it features some householder DIY attempts at increasing the energy efficiency of their dwellings. However, it proved to be a very attractive area in its own right.

Mountfields has its boundaries formed by another loop in the Severn, to the north of the loop within which central Shrewsbury is located. The ground rises from Frankwell and terminates at a steep slope above the river. One house in the layout is dated 1879, so the initial development probably dates from the 1870s, with a tightly-spaced grid of narrow streets.

Access is from a side turning off Frankwell, leading to the small Church of St George, very old-fashioned and unarchaeological for its likely past-mid-C19 date. St George's is built to the *Commissioner's Church* formula, with a wide unaisled nave with a low-pitched roof and a west gable with a very small tower placed centrally.

Past St Georges, the residential layout begins, with a series of parallel terraces running back to the Severn cliff. One terrace is beautifully

sited atop the cliff, with a wide view across the river and open country. Just a narrow footpath runs in front. Housing here is two storey and detailed in an Italianate manner, with stone dressings contrasting with blue and white brick facework. There are some nice blue enamel street name plates.

To the east the houses are larger and detached, with some dating to this side of 1900. One of the 1870s detached houses is the one altered by *Base Architecture* (qv) for their 'Office from Home' scheme. One specially nice terrace of four near St George's Church is in a sophisticated Arts-and-Crafts manner with gentle Gothic touches.



Mountfields CA. C19 cottages opposite St George's Church – original glazing



Darwin Street – detail of early-mid C19 terrace



Delicious quartet of Arts-and-Crafts cottages

DIY alterations largely involved UPVC double glazing, but one house had double-glazed units inserted into the existing sashes. The flatness and uniformity of the double glazing strongly contrasted with the original float glass next door!

One house had a large solar water heating panel on the tiled front roof slope. This CA is now subject to an Article 4 Direction, so the DIY alterations visible date from before its introduction.

St George's Church featured external secondary glazing that looked almost brand new. Nothing to do with energy conservation, but installed to protect the original leaded glass from missiles. Not a good idea, as one walkabout participant pointed-out. Such security glazing can trap moisture in the air sandwich between the two windows. This moisture in turn leads to corrosion of lead cames. The security glazing needs to be drilled for ventilation purposes.



That polycarbonate security glazing at St George's Church

The CA streets connect through to the Guildhall and new theatre. Here, some derelict space has been re-developed for housing. In scale and appearance it aims to replicate the real thing further north, but fails to do so owing to its stretcher bond brickwork and C21 proportioning.

RIVERSIDE WALKABOUT

11th December 2008

After lunch we crossed the river on the footbridge and walked east along the river frontage. The first stretch was characterised by C20 commercial development (including a multi-storey car park) on the 'town' side of the road. However, things got more interesting after that, with some C18 houses islanded between the road and the river and a view of the red sandstone bulk of Shrewsbury Castle at the highest point of the town.

The Railway (GWR) enters Shrewsbury immediately next to the castle, with its embankment and viaduct running north close to the river. This resulted in a spectacular signal-box on a tall, three-storey brick plinth.

On the opposite side of the road to our afternoon destination (the Pump House) was a former Congregational Church that had undergone

an office conversion and was now empty again and on the market. The building itself was a very agreeable piece of Edwardian Baroque.



Shrewsbury Castle – from below



Four storey GWR signal box



Office conversion of large Edwardian Chapel – seeking a new owner

THE PUMP HOUSE

11th December 2008

We had the opportunity of a guided tour of the former Shrewsbury Borough Pump House, now converted and extended to accommodate *Shrewsbury Environmental Technology Centre* – occupied by the Marches Energy Agency and a consortium of other tenant organisations involved in sustainability matters.

On an island site between the road and the river the building had begun life as a red brick Edwardian municipal pump house. After being converted into a Social Club for Shrewsbury Borough employees it had become redundant. It was not deemed suitable for residential conversion as there

was no means of guaranteed access during floods. So it became available for office conversion.

The shell of the building was gutted and a large side extension added to the south, using a portfolio of C21 cladding finishes. The design brief was to make the building as low-carbon as possible. To that end the south-facing roof slope incorporated an array of 44 photo-voltaic panels, backed up by further solar panels for heating water.

The small car park at the side and rear is actually the lid of a rainwater storage reservoir. The rainwater is used for toilet flushing.

Heating is by a boiler fuelled by wood pellets delivered from a source on the Welsh border. The pellets are actually consolidated sawdust and small enough to be handled successfully by the machinery that feeds the boiler.

Walls and roof are heavily insulated, and heat from computers is collected and recycled to help warm the building. All interior lighting is controlled by sensors, which adjust light levels in accordance with the natural light received through the windows.

Whilst the glazing framing looks like UPVC it is actually locally-sourced softwood with a paint finish. The new wing, which is timber-framed, is clad in a mixture of soft lime render and natural finish close-boarding. Rainwater goods are galvanized sheet metal sourced from Sweden.

The converted Pump House is intended to be a 'showcase' example of sustainable design. Stylistically, the cream and grey new extension, with its gables, does not complement the original Edwardian orange brick and the bays into which it is formed by wall piers. There was a slip-up in the detailing as the corner adjoining the car park lacks any kind of protective bollard, with the result that the render and downpipe have suffered vehicle impact. A nice touch was that one of the few vehicles in the car park was signwritten to announce that it ran on rape seed oil!



Pump House from the street – original to right, new to left



Pump House extension – detail at rear



Pump House end gable, showing new first floor accommodation

THE NEW THEATRE

11th December 2008

At the time of the last Branch visit to Shrewsbury, the new theatre was in the early stages of construction, with groundworks taking place. In December 2008, the fabric was substantially complete, giving a very clear idea of the final effect.

In your Editor's personal view, the promise of the drawings has not been affirmed by what has actually been built. For two reasons – (1) a very fussy outline and elevations, and (2) an unfortunate palette of finishes. Whilst there is a lot of natural stone facing, it horridly resembles the kind of concrete described as 'reconstituted stone'. There are panels of very pale vertical timbering here and there, and the colouring of the metal work and window framing is a lack-lustre mid grey. In addition, the stonework coping either lacks an adequate drip detail or does not have one at all, with the result that there were unsightly patches of damp under the copings.



Theatre – from across the river



Theatre from Frankwell

[Previous page] Fly tower overshadows C18 building to left. Moisture retention under coping and along string.

As is, the theatre is an aesthetic disappointment. However, there are some fully-glazed galleries overlooking the river which should give some very attractive views to theatre patrons. But I hope the glazing is double or triple, otherwise the building is likely to have a big appetite for energy from non-renewable resources!

GARDEN WALLS & THEIR STABILITY CONSIDERATIONS Part III

Charles Shapcott

Factors of Safety

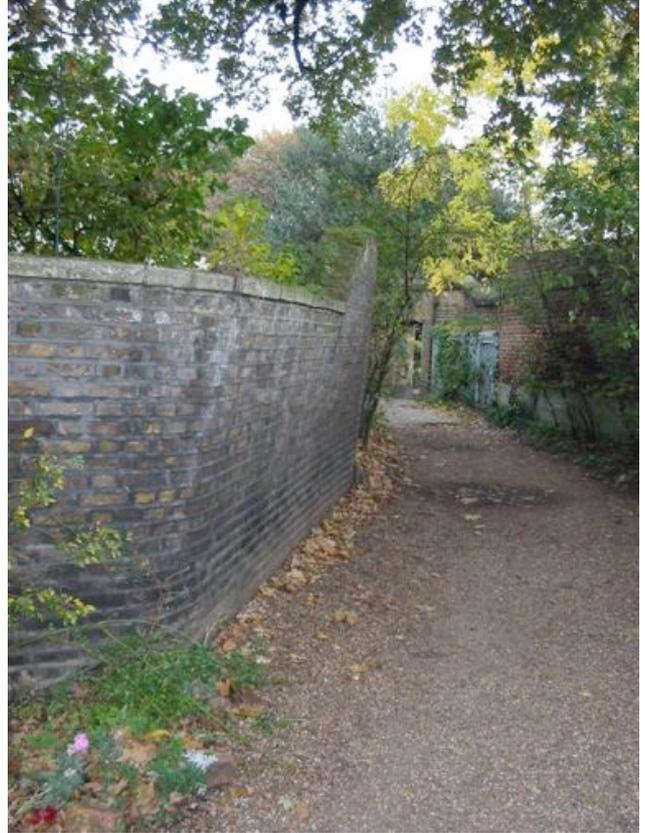
Most aspects of free-standing walls are calculable for wall structures as much as it is for buildings generally. The wall structure firstly should be checked as though it were in its original condition and then properly repaired, and in its present attitude, before any strengthening is applied. The fact that it is standing must provide some confidence value to whatever result is derived from the 'middle third rule' or any other calculations undertaken.

The ability for mortar to take tension is a debatable point, especially when dealing with a potential instability, reasoned professional judgement to be exercised. Generally gravity and wind load calculations will suffice, but there may be cases where some measure of tension may be detected in an analysis and can be accepted. Included within this note are walls still standing that shouldn't be, the photos and the lamp-post are vertical!



Monitoring

Many times we are called upon to reach rapid conclusions as to the stability of a structure mostly for political reasons. Cracks are often only reported when they 'appear to be getting worse', but often the complainant cannot say definitely, or more importantly which way. Any structural movement has to be established and in what direction, before any repairs suggested.



There are many measuring devices that can record movement. A cracked glass tell-tale is no use in the analysis of direction or rate of movement often not sticking properly to the substrate. SPAB & BRE pamphlets describe some of the better devices, but to these can be added strain gauges or vernier callipers are the most useful and discrete crack measuring devices. The targets required are brass screws or small discs less than 5mm. diameter. They can be placed on the structure with minimal damage, and are unobtrusive when not in use.

Fire Damaged Structures.

Often perimeter walls, of once stable, buildings are left exposed as a result of the destruction of the internal elements such as floors and partitions. Added to the general problems of stability there are considerations as to masonry damage as a result of thermal shock and the effect of fire on built in timbers. Often some forms of restraint have to be added to keep the structure together till its future can be decided where the simpler and most advocated action would be demolition.

Parapets

They are in some ways hybrid structures when viewed in terms of this guidance in some ways these can be described as 'free-standing walls' but with their generally elevated position they can be more exposed than a low-level structure. They are often equally poorly maintained. They are subject to worse weathering conditions due to the higher exposure position on buildings and must be regarded in a similar vein as chimneys, which are discussed in another paper. Often, in older structures, economies

were made in their construction, with the backing bricks being of a poorer quality. The provision of 'tucks' in joints for flashing and weathering details must be taken account of in assessing the nett section for stability.

Monuments

In this category I am considering the upstanding remains, often of scheduled structures, whether the walls were originally part of a perimeter wall or a building. The integrity of the masonry has to be assured and the optical devices are used to check for voids in the construction. These remains are subject to the similar destabilising factors as the lower garden structures, often progressing through to the criteria used in the chimney assessment section of this paper. They are often of irregular plan and vertical format that may assist or aggravate their ability to resist external forces.

Castle Green
Bishops Castle
Castle Wall
as repaired
17/7/2001.



required forces can be calculated but it is the mass that has to be generated and made effective, without the risk of a further force upsetting the calculated balance achieved. A version of a tension buttress that I have seen proposed was the usage of wires, tied down to a mass concrete base or 'pile' formed by a motorised fence post auger. The tension in the wires has to be judged carefully, by the use of strain gauges, so as not to damage the structure further.

Consolidation of Existing Material

Pointing & Brick/Stone Replacement. Any reduction in section of a wall, be it by unit or bed joint erosion would be considered a weakening factor. Having established the criteria for a minimum masonry thickness this, then fully pointing the joints or local area replacement of parent material can be considered as the way forward in restoring the original section.

Local repair of brick elements can be achieved, whilst it may be time consuming, but we are all aware that there are varying levels of firing that effect how the element will wear in service. The general plane of the wall will need to be assessed and a decision on made as to the degree of brick/unit degradation that can be tolerated. The extent of eroded areas and their relative size and location over the face area of the wall has to be considered carefully. Individual units then carefully cut out, not damaging further those surrounding, and new pieced in. Sometimes the original brick that has been cut out it may be turned to present a further good face to the outside.

Matching of brick size, texture and mortar is most important, otherwise the 'new' work will visually disturb what could be quite a mellow construction also mortar mixes and joint widths can affect the appearance of the wall. Matching the original is all important so sample walls are also essential to provide examples for quality of subsequent work, and need a specific item within a contract rather than by trial and error on the structure itself.

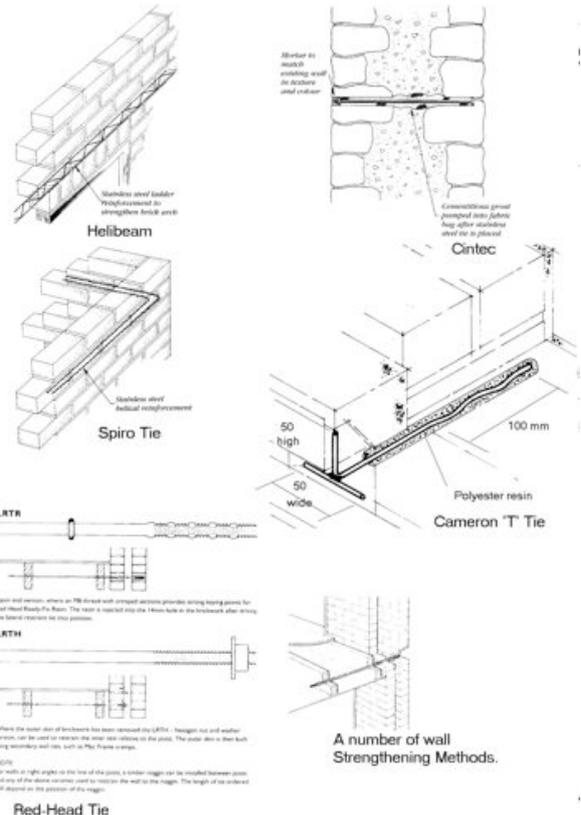
Options for Repairs – Solid Structures

The options for repair are innumerable. Always there has to be the will to continue the life of the structure. Not all options will be acceptable, nor will all solutions be reversible or as reversible as may be desired. The best way forward is to prepare a number of repair statements that are all in terms of pure engineering and subject these to the Historian's assessment; including damage incurred in installing scaffolding to gain access to the works area.

Additive structures

Buttresses & Piers. These must be carefully assessed in respect of proportions and the foundations used. There is no point in undermining the foundation of the wall in trying to achieve a 'better' foundation. There are many cases where buttresses are attempting to pull the wall over as a result of the new foundation soil's reaction to the new load of the buttress. A number of options here pre-compression, jacking or use of different types of foundations.

Tension buttresses are theoretically possible but awkward to achieve in practice, despite tension being the most efficient method of load transfer. The



Ties

There are times where there can be the acceptance of an amount of wall de-lamination and tying the looser masonry back together with the aid of mechanical fixing. Internal anchors can be used, after the style of replacement house wall ties, to restrain what could be perceived as two separate leaves. The desire is to enhance the number of headers already within the wall. There are proprietary ties or some can be devised from threaded rod suitably glued to the parting leaves. The intervening void should be packed or grouted to exclude moisture and further frost action.

'Home made ties' can be from stainless drawn rod, threaded bar and/or reinforcement made up into 'staples' the minimum requirements are for 100mm embedment beyond the covering pointing and 200-300 mm to either side of the crack being stitched.



Consolidation by Grouting - Here a degree of ingenuity has to be performed. The wall may be voided as in many cases with a random stone cored wall. The wall is checked for integrity with optical probes and a decision made whether the core is capable of receiving grout.

Grouting is performed using a weakly cementitious lime or PFA based material introduced by either gravity or very low pressure pumping. Small 20mm diameter holes are drilled into the wall where voids have been located or are anticipated.

They should be about one metre apart horizontally and 450mm vertically on a staggered pattern. As the holes are drilled they should be washed out thoroughly with clean water, pouring in at the top holes and continuing to pour until the water runs out clean at the bottom. This is to clear out dust and soak the internal faces of the wall. During this process a note should be taken of other joints through which the water runs out.

Thorough 'wetting in' of all voids is essential especially if there is a time lapse between the last wash out and the grout installation. As illustrated and after the EH Technical Handbooks 1-3 by the J & N Ashurst publications.

General Comments on Mortars

Pointing is the process of filling the outer part of the joints between masonry units in a wall, either during the process of building, or to restore full section of the wall when the original material has weathered back from the surface. Compatibility between the main wall mortar and the new pointing is essential. Mortars for reconstruction of walls or any structure should relate to and mimic that with which it was originally constructed. Additionally the prevailing weather during the rebuild period, and the staff used to be carefully considered. Sampling is the best way

of checking for parity, sample locations and sizes are specified in UK Codes of Practice.

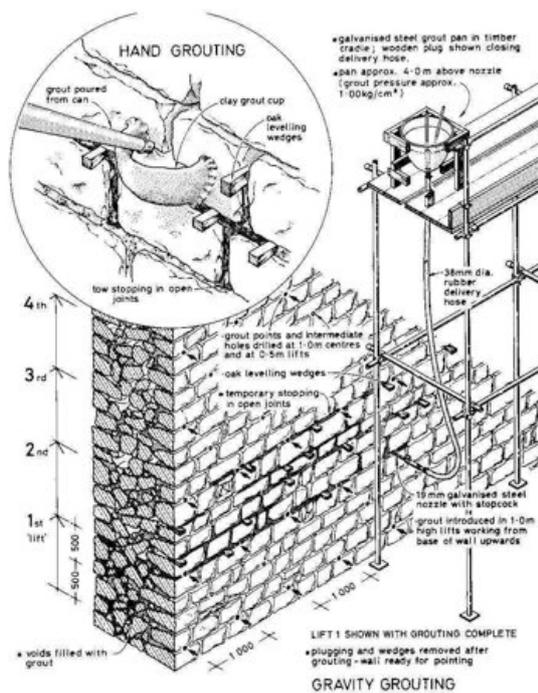


Figure 5

Mixes no stronger than 1:3 lime:sand are considered reasonable for historic work but may not achieve a good set or durability if built in autumn or winter, despite best endeavours at protection. A winter mix may be as strong as 1:2 lime:sand to overcome the curing problem, or a hydraulic lime used but still with suitable weather protection.



BRICK EROSION DUE TO IMPERVIOUS MORTAR IN A LOCAL AREA.



It should always be remembered that 'hard onto soft' will not work. Often one sees 'new' shallow pointing falling off the front of the joints. This is not only because it was shallow but in application the joint may not have been 'wetted in or cured' properly. Any mortar if cementitious or stronger it has a greater potential for shrinkage and is loosened on initial drying out. Pinch points can be caused with a hard mortar putting stress on the hard fired brick edges.

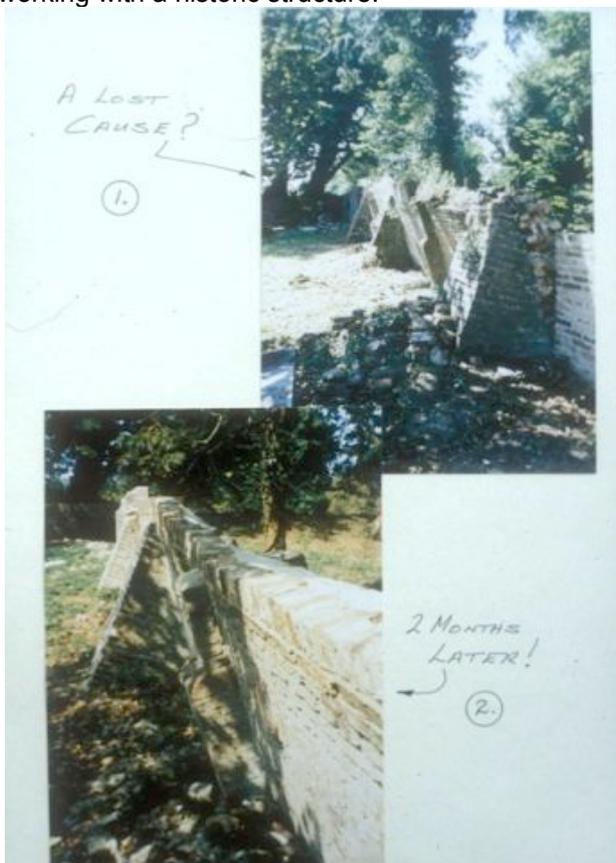
The present building trades will try to insist that cement be added, partly because that is what they are used to, and secondly it is better for productivity. However a hydraulic lime can give comparable results and lime mortar walls need more protection in their construction period, as the constituents take longer to set. Historically time was not usually of the essence, and the labour element of construction was relatively cheap, compared with the raw material cost.

Conclusions

While producing an economic scheme should be in the forefront of all the design teams' minds, the importance of the structure to be salvaged should be emphasised to all in the design and construction teams. An argument that is most useful to use is that we have the best of the remaining historic structures left, because all the badly built ones have fallen or been taken down.

Some of the requirements, such as reversibility of a repair, as often viewed as unusual by some practitioners, but it paves the way for future alternative repairs using new technology and still leaving the subject relatively undamaged.

We must be allowed to do some 'lateral innovative thinking' and be aware enough to recognise that the first method thought of for solving any problem is the *only* one. These ideas must be allowed to be tested by all parties in the design team, for what suits one member of the team may prove an obstacle for another. All design processes are meant to be interactive but there are a few 'extra' factors in working with a historic structure.

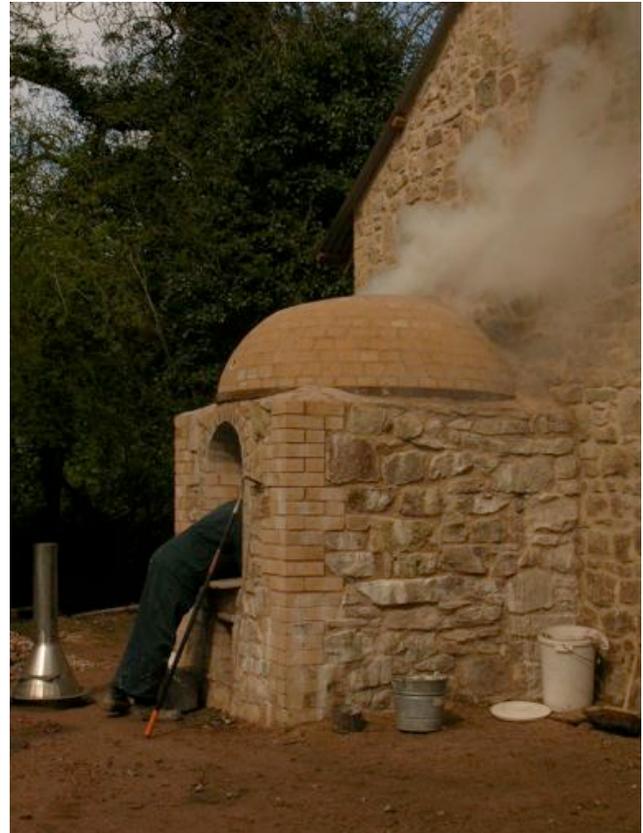


IRONBRIDGE INSTITUTE
Learning Opportunities

In the limelight

Do you need to brush up on your lime technique? - do you know your hydrated from your hydraulic? would you like to experience a hairy mix? do you know how hard NHL 5 really is??

Come and see the new trial kiln and the restored limestone landscape at Llanymynech into the bargain. Taught by lime experts Tim Ratcliffe, Conservation Architect and Simon Ayres of Lime Green.



The Kiln



Students at work

Please contact harriet.devlin@ironbridge.org.uk or phone 01952 435969 for further details.



Getting plastered!.



Carreg War Memorial

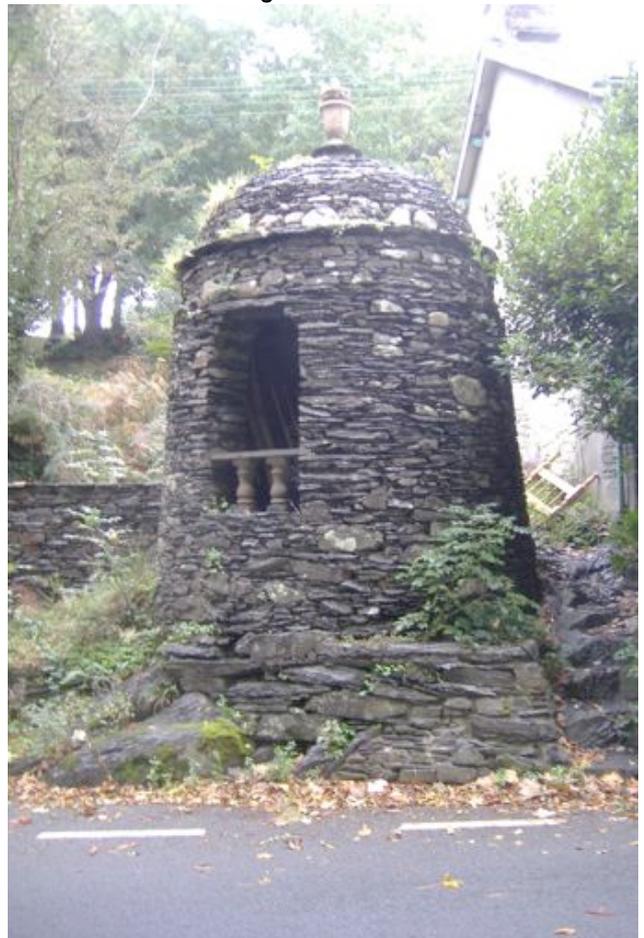
CLOUGHING IT UP

The Editor

As the contemporaries of the late *Clough Williams-Ellis* were wont to describe his architectural work. The famous or notorious 'estate village' of Portmeirion was just one of his achievements. Not so very far away from Portmeirion, tucked into the mouth of the Croesor Valley, is the heartland of Clough territory. His home, Plas Brondanw, and the adjoining village of Carreg. I passed through Carreg on a wet day last summer, on my way to inspect progress on the Welsh Highland Railway. Some clearly 'Clough' work was in evidence.



Plas Brondanw gatehouse cottage



Cottage Garden Gazebo

EDITOR'S SHOPPING LIST

Your Editor welcomes, for the next Edition of the Newsletter (No 36), to go out in June 2009, the following:

- ❖ Personal news of moves, retirements, arrivals;
- ❖ Copies of announcements and press releases;
- ❖ Case Studies;
- ❖ Letters;
- ❖ Articles on Law and Techniques;
- ❖ Book Reviews.

Material for inclusion in No 36 should, preferably, arrive not later than the end of May 2009. Please contact your *Newsletter Editor*: Peter Arnold, 16 Elmbank Road, Walsall WS5 4EL; 01922 644219; pdarnold@care4free.net

PICTURE POSTSCRIPT



Base Architecture - 'Office from Home' project, Mountfields CA, Shrewsbury. The glazed box with deciduous tree shading



That cottage in Kidderminster – general view



The Pump House, Shrewsbury – solar power output monitor



Another Stafford prefab – original roof and cladding, but new windows



The Pump House – PV panels on roof



Darwin Centre, Shrewsbury – rear elevation



Carreg War Memorial. Two more views