Building Survey

Relating to:

XXXXXXXXXX
XXXXXXXXXX

Structural Engineers & Chartered

www.allcottassociates.co.uk

Birmingham Office
35 St. Pauls Square
Birmingham
B3 1QX
Tel: 0121 718 7008

Oxford Office
John Eccles House
Robert Robinson Avenue
Oxford OX4 4GP
Tel. 01865 479670

Leamington Spa Office
Ladbroke Farm
Banbury Road
Leamington Spa CV47 2BY
Tel. 01926 812380

Email: info@allcottassociates.co.uk

Project Preface

Client name:	XXXXXXXXXXX
Client address:	XXXXXX XXXXXX XXXXXX XXXXXX

Senior Partner:	David Allcott
Prepared at:	Allcott Associates LLP 35 St. Pauls Square Birmingham B3 1QX
Document prepared by:	**Matthew Baker** BSc (Hons) MRICS

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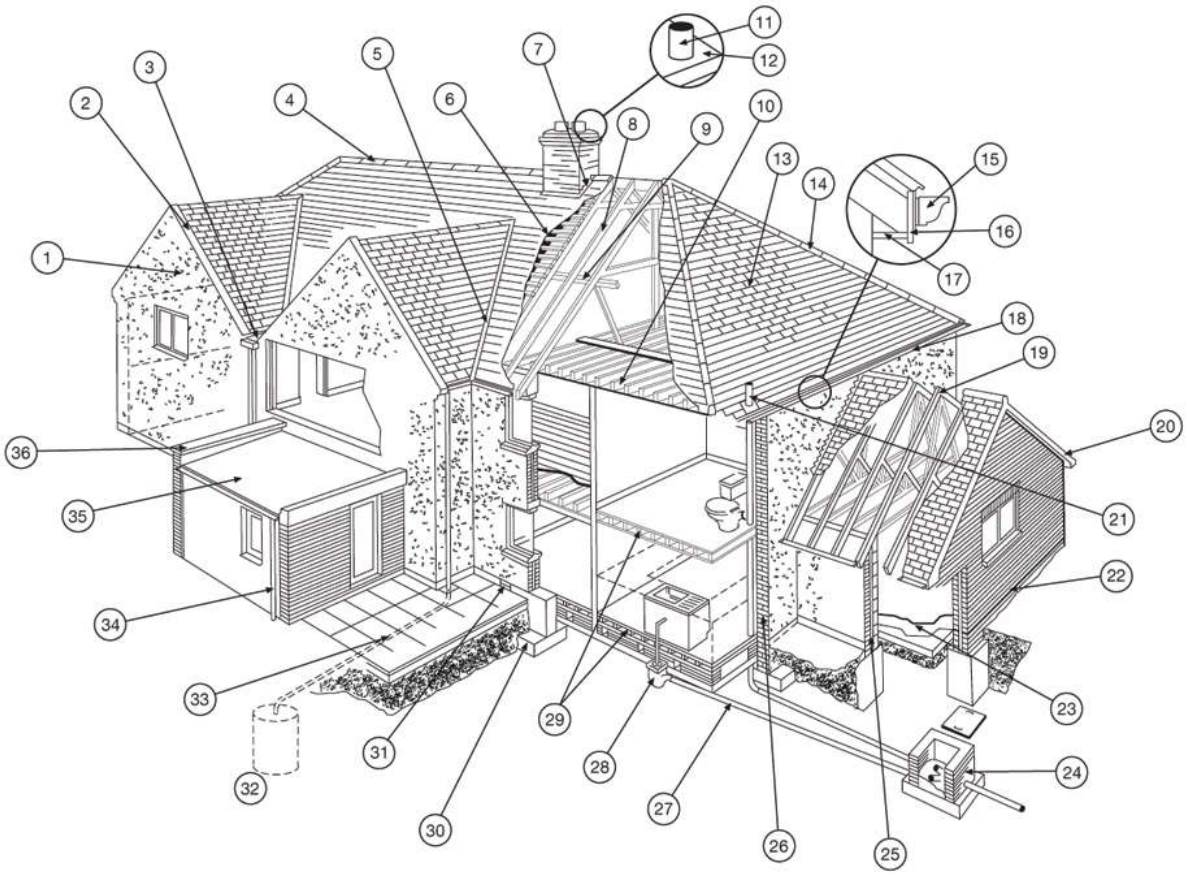
Traditional House Construction



KEY

1 Gable end wall
2 Verge
3 Valley gutter
4 Ridge tile
5 Valley
6 Roofing felt
7 Flashing
8 Rafter
9 Purlin
10 Ceiling joist
11 Pot
12 Cement
13 Hip roof
14 Hip tile
15 Gutter
16 Fascia
17 Soffit
18 Eaves
19 Roof truss
20 Barge board
21 Soil-and-vent pipe
22 Damp-proof course (DPC)
23 Damp-proof membrane (DPM)
24 Inspection chamber
25 Cavity wall
26 Solid Wall
27 Foul drain
28 Gulley
29 Floor joists
30 Foundation
31 Airbrick
32 Soakaway
33 Surface water drain
34 Downpipe
35 Flat roof
36 Parapet

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1 Introduction

1.1 Instructions

In accordance with instructions received from Mr. XXXX XXXXXX on 19th May 2011 we have carried out a General Structural Inspection of the property known as XXXXXXXXXXXXXXXXXXXX . The inspection was carried out on 24th May 2011. All comments are based on visual inspection only and no opening up of areas was carried out. No below ground investigations have been carried out and no drainage survey has been undertaken.

1.2 Brief

We have been requested by the prospective purchaser to carry out a general structural inspection of the above property consequently this report is limited to the structural elements of the property only and maintenance issues will only be highlighted if considered relevant.

1.3 Site inspection

Where the terms “right hand” or “left hand” are used, they assume that the reader is facing the front of the property with the main access door situated within the front elevation.

We can only make general comments on electrical circuits as detailed comments and inspections have to be carried out by an NICEIC registered electrician. Also we can only make general comments on gas installations, as detailed comments and inspections have to be carried out by a Gas Safe Registered Engineer.

1.4 Terminology

Where the expressions immediate, short term, medium term, long term and very long term are used they generally mean the following:

- Immediate: within 1 year
- Short Term: within the next 1 to 3 years
- Medium Term: within the next 4 to 10 years
- Long Term: within 11 to 20 years
- Very Long term: over 20 years

Where relating to structural damage and crack widths the expressions negligible, very slight, slight, moderate, severe and very severe are used they generally mean the following:

0	"negligible"	< 0.1mm
1	"very slight"	0.1 - 2mm
2	"slight"	>2 but < 5mm
3	"moderate"	>5 but < 15mm
4	"severe"	>15 but < 25mm
5	"very severe"	>25 mm

Table 1.

Classification of damage to buildings based on crack widths.

2 General Description of Property

This section of the report gives a general overview of the property inspected.

XXXXXXXXXXXXXXXXXXX is a detached Grade II Listed cottage, the majority of which is constructed in 225mm wide solid brickwork beneath a timber pitched and thatched roof. The property was originally two cottages which have been joined to form one dwelling.

To the right-hand side of the property is an adjoining conservatory consisting of dwarf brick walls with timbered glazing unit above and a pitched and hipped roof with glass covering (fig.1).

Figure 1: Single storey projection

Figure 2: Adjoining Conservatory

To the rear right-hand side of the property is a single storey projection, constructed in half brick, 100mm wide brickwork with stiffening peers, with a pitched and gabled roof with tiled covering (fig. 2). A rear entrance door is situated in middle of the wall.

To the left-hand side of the rear elevation is a further elevation, which is constructed in 225mm wide solid brickwork, beneath an extended roof overhang. The centre part of the rear elevation is finished with a painted, smooth cement render.

3 General Condition of Property

In this section of our report, we summarise the defects noted and principal concerns regarding the property.

3.1 External Condition

3.1.1 Front elevation

The main entrance door is to the left-hand side of the front elevation and no cracking was evident around the door. The door requires minor works as paint is flaking from the bottom and the frame is rotten at both bottom edges. An electrical connection was noted behind the wire netting which appears dangerous and is not an external connector (fig. 3).

Figure 3: Electrical connection

A vent pipe to the drainage system terminates beneath the second ground floor window, and leads into what appears to be a painted or bitumen lined gulley trough extending the full width of the property (fig. 4). This pipe contravenes current regulations as it should terminate at least 900mm above an opening window, if the window is within 3 meters of the pipe.

Bird droppings were noted along the wall, indicative of vermin ingress. The brickwork at first floor level appears to be 100mm wide, typical of the age of the property. There

is a slight recess within the brickwork where the two original cottages were joined, which is of no major concern.

Figure 4: Vent pipe and trough

3.1.2 Windows

The windows are metal crittall windows and although old they are in reasonable condition. There is a shallow arch above the second ground floor window, with no cracking noted within the brickwork. The first floor window is beneath eyebrow straw covered dormor and has exposed timber beams, and is in reasonable condition for its age (fig. 5). The paintwork has flaked off the timber beams and cannot be repainted due to wire netting.

Figure 5: First floor window

There is a 1mm wide hairline crack above the second ground floor window, up to the first floor window, which appears to be due to thermal movement (fig. 6). In addition, the ground floor window cill requires attention due to flaking paint.

Figure 6: Hairline crack

Work is required on the window cills of what was originally the right-hand cottage, due to paint flaking. There is an extremely old window at first floor level, with the eyebrow thatch above it, the frame of which is rotten. There is an old hairline crack extending upwards above the first window of the right-hand cottage, however it is not considered to be a concern. There is a further 1mm wide crack above the right-hand ground floor window, due to the shallow arch above the window. The window cill again is in poor condition.

3.1.3 Thatch, roof and chimneys

The right-hand cottage has the appearance of being older, with tree trunk rafters sticking through the wall plate beneath the thatch. In common with the left-hand cottage, the ends of some of the rafters were noted to be worm eaten and rotten (fig. 7). On the left-hand side of the property the thatch extends downwards to ground floor ceiling height with extended rafter feed. Here too, worm attack and rotten rafters were noted (fig. 8).

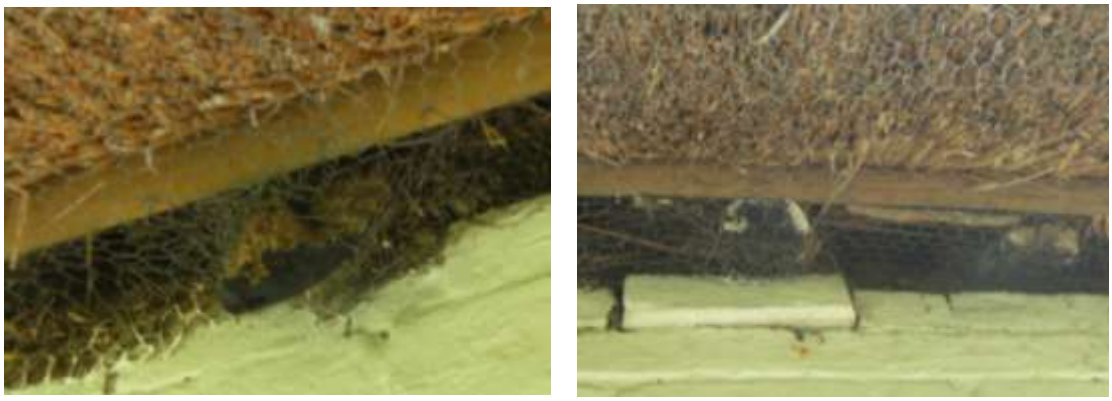

Figure 7: Some rafters are rotten

Figure 8: Some additional rafters are rotting

The roof surface is in reasonable condition and we have been advised that it has just been completely netted. We confirm that this netting is new. The thatch is a straw thatch and again we have been advised that the roof was re-thatched in 2000, with the ridge being re-thatched with straw recently, at approximately the beginning of May.

Chimneys are to both ends of the property, appearing of some age, with the right-hand chimney spreading towards the top. There is no structural damage to the chimneys. The chimneys are flashed with lead to the thatch, which is acceptable, however it would normally be carried out with cement mortar on thatched properties (fig. 9).

Figure 9: Chimney

3.1.4 Side elevation and conservatory

The right-hand gabled elevation is partly covered by the conservatory. The area that could be seen above the conservatory has half timber framing, with 100mm wide brick infill. The timber appears in reasonable condition. No cracking was noted within the brickwork. However, again the window is exceptionally old, appearing to have leaded lights with two of the lights broken. Where the conservatory has been added, there is a proprietary valley which drains to a hopper head, which enters a gulley at floor level. The conservatory is of recent origin, having dwarf brick walls and timber glazed panels above. No distortions or damage were noted to the conservatory area (fig. 10).

Figure 10: Conservatory

3.1.5 Rear elevations

Within the rear elevation on the right-hand side there is a single-storey projection, which is only half brick, 100mm wide with stiffening peers. This area has a tiled roof, which has slight dishing, however the dishing is not noticeable. The thatch extends over the tiled area and again the thatched roof is in an acceptable condition, having recently been netted. No cracking was noted within the exposed brick walls.

There is a bitumen coated gulley area to the rear of the single-storey projection, extending to gulley outlets at either end. The gulley outlets require minor repointing. The gutter requires more brackets, as it was bowing (fig. 11).

Figure 11: Gutter

The doorway is within the centre of the rear projection, which is flashed with cement to the tiled area. The cill to the door is rotten to the left-hand side. To the left-hand side of the rear projection is a smooth area of painted render, with timber windows and metal crittall windows. The timberwork to the window appeared in reasonable condition, with the metal windows reasonable.

To the left-hand side of the rear elevation there is a further rear projection, constructed in 225mm wide brickwork. Here, the thatch extends down to approximately 1.2m above ground level (fig. 12).

Figure 12: Rear projection

3.2 Internal Condition

3.2.1 Ground floor

The property is entered directly into the hallway, situated on the front left-hand side of the property, in the original left-hand cottage. The floor is approximately 150mm below external ground level. The floor is finished with ceramic tile, which appears to be firmly fixed. The walls are plain plastered, and the ceiling is finished with Artex. Access into the left-hand roof space is within the ceiling of the hallway.

The incoming electric supply is an old fuse wire unit which has individual trips, which is better than the original wire fuses. However, a wire fuse board works differently to current MCB boards and we would advise this is up rated to an RCD MCB Board. The unit is at a high level on the right-hand wall, above the doorway into the lounge.

In the front left-hand corner of the hallway is the study, accessed off the left-hand side of the hallway. The study has timber planking on the floor and lining paper on the left-hand wall, with woodchip paper on the other wall and the ceiling. Old distortions are evident within the ceiling, due to it being an old lath and plaster ceiling, with the plaster having de-bonded from the lath. At the rear right-hand corner of the room is an airing cupboard, with an old tank with a separate lagging jacket. The may have an asbestos content and should be checked.

There is a shower room to the rear of the study, within the rear extended roof section (noted previously) to the left-hand side of the rear elevation. This gives a sloping ceiling area to the rear, where splits were noted on plasterboard joints (fig. 13). The ceiling is also finished with a woodchip paper. The timber planking to the floor continues into the room. The rear wall is finished with ceramic tiles along with the right-hand wall around the shower cubicle. No significant structural defects are evident within the room.

Figure 13: Splits in plasterboard

A lounge is accessed off the right-hand side of the hallway, the floor of which is even lower than the hall by approximately 150mm, with two steps down. Therefore the lounge floor is approximately 300mm below ground level. A large inglenook fireplace with brick surround is on the left-hand wall (fig. 14). The lounge has an original beamed ceiling (fig. 15). The timberwork of the ceiling appears to be in reasonable condition, with woodchip paper on the plaster between the beams. With the exception of the inglenook area, the walls are finished with a painted lining paper. The paper is lifting to the right-hand side of the front wall, indicating damp is present (fig. 16). There is a hole within the inglenook fireplace within the floor, where the grate appears to have been dislodged, which we consider is an air hole (fig. 17). This requires resetting. The floor is solid and feels relatively level. It is not original. Exposed cables were noted within the lounge area which by current electric regulations should be ducted.

Figure 14: Lounge fireplace

Figure 15: Original beamed ceiling

Figure 16: Evidence of damp in the lounge

Figure 17: Air hole

To the rear of the lounge area is a lobby with a stairway to first floor that extends against the rear wall and up to the front of the property. The rear wall is half brick thick, 100mm wide. A plaster repair has been carried out to the front wall on the right-hand side by the stairway (fig. 18). However, no new distortions are evident in that area. The ceiling again has an Artex finish. There are exposed cables down the wall to plug sockets. The lower area below ground level of the rear wall has been thickened to 225mm thick.

Figure 18: Plaster repair

Leading off the left-hand side of the lobby, within the extended roof line on the rear section, giving a sloping area ceiling, is a bathroom. The walls of the bathroom are finished fully with ceramic tiles, and the ceiling is finished with Artex. There is a beam in the ceiling. The rear wall is half brick 100mm wide. The floor is slightly higher than the lobby by approximately 50mm. Old distortions are evident within the walls and ceilings.

The right-hand room, the music room, leads off the lounge and has original beams on both the wall and the ceiling (fig. 19). An old distortion is evident in the timber beam above the doorway into the room however this beam has been in this position for many years. There are also old distortions on the ceiling and on the plain painted plaster infill between the wall beams. Extensive exposed cables were noted, nailed to the walls, which contravenes current regulations and are considered dangerous (fig. 20). The floor again is solid and feels reasonably level. The rear wall is finished with Artex, which appears to be of some age.

Figure 19: The music room

The floorboards to the first floor room above the music room are showing to the rear of the room and a spliced floor joist was noted, which has only been finished with one bolt to the right-hand side, giving a distortion on the splicing (fig. 21). This splicing requires amendment.

Figure 20: Spliced floor joint

The first room in the original right-hand cottage is accessed through the right-hand beamed wall of the left-hand cottage. There is also a further stairway up to first floor to the rear of the room. The stairway is showing within the room and has been repaired with a metal strap around the stairway (fig. 22). There is movement on one of the treads where it appears the wood had been eaten by a beetle (fig. 23). Again, walls and ceiling are finished with timber beams, with plain painted plaster infill. Extensive exposed cables are again present (fig. 24). The floor feels reasonably level and firm.

Figure 21: Right-hand staircase

Figure 22: Damage to the stairway

Figure 23: Exposed cables

The kitchen is accessed off the front right-hand side of the right-hand room, and has a heavy Artex finish to both walls and ceiling. The walls are relatively roughly plastered and distortions are showing within the ceiling. The ceiling appears to be lath and plaster, with plaster having de-bonded. There is an exposed timber beam extending from left to right within the middle of the ceiling. The kitchen units are relatively old, with doors of timber planking (fig. 25). There is a further inglenook fireplace with a brick surround on the left-hand wall. Again, exposed cables and surface plugs are evident. The floor is relatively level and firm.

Figure 24: The kitchen

There is a utility area off the rear of the kitchen, within the extended tiled roof area noted externally to the rear right-hand elevation. The rear wall is 100mm wide half brick brickwork. The walls are relatively rough and distortions are evident in the ceiling. Again, surface mounted plugs and cables which we consider are relatively dangerous were noted. Low level damp is apparent, due to the area being below ground. The ceiling is on two different levels, and there are cracks in the ceiling. Further units around the right-hand side are in reasonable condition.

The conservatory is accessed off the right-hand side of the kitchen and is a proprietary construction of reasonable quality (fig. 26). The windows and roof consist of double-glazed units, with steel tie rods to prevent the upper part of the wall spreading, which is a normal form of construction. The conservatory is of a reasonable quality. The dwarf walls are finished with painted plaster and no distortions are evident. The floor is finished with ceramic tile, and is reasonably level.

Figure 25: The conservatory

Leading off to the rear of the left-hand room, adjacent to the kitchen, is a further lobby, with a staircase to the first floor of the original right-hand cottage (fig. 27). Again, the ceiling is sloping as it is in the extended roofline section of the property, which makes access to first floor relatively difficult. This would not conform to current regulations. The plasterwork is rough and again has the appearance of being lath and plaster onto the original tree branch rafters. There are timber beams with plaster infill within the wall, which appear to be in reasonable condition.

Figure 26: Lobby staircase

Leading off the left-hand side of the lobby is a further bathroom, with a sloping ceiling to the rear section due to it being in the extended roofline section noted to the rear of the property (fig. 28). The bathroom has distortions within the ceiling and walls. There is ceramic tiling around the bath and the walls, which appears free from movement, with no splitting of the tiles or opening of the grouted joints.

Figure 27: Bathroom off the lobby

3.2.2 First floor

The right-hand rear lobby staircase leads up directly into the left-hand bedroom of the original right-hand cottage, again having a beamed ceiling with beams to the walls. This is the master bedroom. The first floor external wall appears to be 100mm thick, constructed within the timber beams which are slight out of verticality. A separation joint was noted within the front right-hand corner, indicative of some slight lateral spread, which probably occurred when the property was re-thatched (fig. 29).

Figure 28: Separation joint in left-hand bedroom

The room is partly within the roof space. Consequently, there is no horizontal tiling of the bottom of the tree branch rafters. The plaster on the walls and ceiling is uneven, again due to it being lath and plaster following the lines of the tree branch rafters. The floor is uneven, rising towards the middle, due to old distortions on the original floor joists over the years, with the centre structural beam remaining in place. The loft housing the cold water tanks can be accessed from the ceiling.

The right-hand bedroom extends the full depth of the property, and is accessed off the middle bedroom. Again, the room is partially within the roof space, with no lateral tiling of the bottom of the rafter legs. Part of the ceiling appears to be collapsing (fig. 30).

Figure 29: Collapsing ceiling

A separation joint which mirrors that which was noted within the left-hand bedroom is evident where the dividing wall met the front wall, indicating some slight lateral spread (fig. 31). This cracking however does have an aged appearance, being dark in colour with dirt and debris within the crack.

Figure 30: Separation joint in right-hand bedroom

Again, exposed purlins are evident with exceptionally rough plastering to the ceiling and sloping area, again being lath and plaster following the outline of the tree branch rafters. The plaster, however, does sound hollow and has de-bonded from the lath. The door head into the bedroom has dropped and does not appear to have been fixed (fig. 32). There is a distortion within the floor which rises towards the middle due to old deflections of the original floor joists. A further tank cupboard was noted within the right-hand bedroom against the left-hand wall to the rear of the inglenook, where a pre-lagged hot water cylinder is evident. However, the pipe-work appears awkward.

Figure 31: Dropped door head

There is an inter-connecting door within the bedroom, which gives access directly into the left hand middle bedroom, which would have been within the adjacent cottage. We, however, accessed the left-hand section of the building from the staircase within the left-hand side off the property leading off the lounge.

The left hand bedroom again has severe distortions to both ceilings and walls, with exposed purlins evident within the ceiling area (fig. 33). Beams are also evident within the left and right-hand walls. The ceiling joists are tree branches, along with the rafters. Consequently, the lath and plaster has followed the branches, which over the years have distorted, causing the distortions to both ceiling and walls. No current cracking is evident within the ceiling area. However, some of the plaster sounds hollow. Again, extensive exposed electric cables were noted nailed to the walls (fig. 34). Old cracking is evident at the junction of the front wall with the right-hand dividing wall of the right-hand bedroom of the left-hand cottage (fig. 35). Again, this appears to be some old lateral spread, more than likely having occurred at the time the property was re-thatched. The raised window with the eyebrow thatching over is to the front of the room, where a valley type construction is evident either side of the window. This is not evident externally, as the thatch gently follows the rise in the roof.

Figure 32: Distorted ceiling

Figure 33: Exposed electrical cables

Figure 34: Crack in wall

The right-hand bedroom within the left-hand cottage again has a window slightly within the roof space, with the roof surface slightly raised, which again was not noted externally due to the gentle sloping of the thatch (fig. 36). The cracking noted within the front left-hand bedroom against the front wall and separating wall is evident. However it has an aged appearance, being dark in colour with dirt and debris within the crack, and indicating some slight lateral spread in the past. Again,

ceiling and walls have distortions in the plasterwork, along with the floor, due to the distortions on the beamed rafters.

Figure 35: Window within roof space

3.2.3 Roof space

The roof space of the left-hand side of the property is accessed from the hallway. The rafters consist of original tree trunk purlins and branches (fig. 37). The underside of the thatch can be seen, and looks original. The original branch batons are in poor condition in various areas. The roof section appears original.

Figure 36: Roof space

The right-hand side of the left-hand cottage roof space is accessed via an observation hatch within the ceiling of the first floor bedroom. This again shows the

condition of the thatch to be reasonable, with branch rafters which are distorted. The batons are in reasonably good condition

The separating wall between the two sections of the roof space is wattle and daub (fig. 38). It has been known for wattle and daub to contain anthrax spores which can last in excess of 600 years consequently we would advise that the wattle and daub is tested to confirm it is safe.

Figure 37: Wattle and daub

There is an observation hatch within the master bedroom ceiling which shows the reverse side of the wattle and daub wall (fig. 39). Again tree trunk purlins and branch rafters are present with the battens in reasonable condition.

Figure 38: Reverse of wattle and daub wall

The right-hand roof space is accessed via a loft hatch within the ceiling of the left-hand bedroom within the right-hand cottage. This space again has tree branch rafters, with the underside of the straw being visible, which appears in relatively reasonable condition and is probably original. Some batons were in poor condition. The wall separating the right-hand bedroom is brickwork and in reasonable condition.

The right-hand bedroom roof space is accessed via an observation hatch in the ceiling, and has similar distortions as that in the other roof spaces (fig. 40).

Figure 39: Right-hand bedroom roof space

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4 Matters for Legal Advisers' Attention

4.1 Building regulations

The building will not satisfy a variety of contemporary standards of construction and performance criteria set out in the current Building Regulations such as, for example, thermal insulation. This statement is true of the vast majority of buildings in the UK.

The statute under which the Building Regulations are made in the UK is the Building Act 1984. Neither this Act, nor the Regulations themselves are applicable retrospectively. This avoids the need for constant improvement of properties to satisfy current standards.

4.2 Planning permission

We have not been requested to investigate and set out in detail the planning history of this property. We have not been provided with any Planning documents on which to comment. Consequently, from our inspection, we cannot comment on the existence or otherwise of any infringements of any Planning Consents or conditions attached to such Consents.

We assume that this matter will be considered by solicitors.

4.3 Statutory

Confirm all Statutory Approvals for all alteration and construction work. Obtain copies of all Approved Plans for any alterations or extensions to the property.

Any rights or responsibilities for the maintenance and upkeep of jointly used services including drainage, gutters, down pipes and chimneys should be established.

The right for you to enter adjacent property to maintain any structure situated on or near the boundary and any similar rights your neighbour may have to enter on to your property.

Any responsibilities to maintain access roads and driveways, which may not be adopted by the Local Authority, should be established.

Obtain any certificates or guarantees, accompanying reports and plans for damp-proof course and timber treatment, which may have been carried out in the property.

Investigate if any fire, public health or other requirements or regulations are satisfied and that up to date certificates are available.

Investigate any proposed use of adjoining land and clarify the likelihood of any future type of development, which could adversely affect this property.

Where there are trees in the adjacent gardens, which are growing sufficiently close to the property to cause possible damage, we would suggest that the owners are notified of the situation.

Whilst there were clearly defined physical boundaries to the site, these may not necessarily lie on the legal boundaries. These matters should be checked through your Solicitors.

You should obtain all guarantees relevant to the property, including matters such as replacement glazing, damp-proof course, etc. The guarantees should be formally assigned to you and preferably indemnified against eventualities such as contractors going out of business.

The tenure is assumed to be Freehold, or Long Leasehold subject to nil or nominal Chief or Ground Rent. Your legal adviser should confirm all details.

Confirmation should be obtained that all mains services are indeed connected.

Confirmation should be obtained by the provision of service documentation, of when the electric and gas installations were last tested.

4.4 Rights of Way, Easements, Shared Services, etc.

Your legal adviser should check:-

- Clarification of boundary positions and the responsibilities.
- Shared driveway.

The property is understood to be located in an area of past mining activity. It is recommended that a written mining report be obtained from the Coal Authority prior to commitment to purchase.

4.5 Guarantees/Warranties

Where work has been carried out to the property previously, it is recommended that guarantees be obtained prior to a legal commitment to purchase. These should ideally be indemnified against eventualities such as the contractors going out of business, and should cover workmanship as well as materials. Confirmation should be obtained as to the residue of the guarantee and that a transfer will occur upon change in ownership.

Legal enquiries should be made to confirm if any testing of the electrical, gas and heating appliances have been undertaken, with any testing of service records being obtained Prior to a legal commitment to purchase.

There may be a guarantee relating to the installation of the damp proof course.

5 Environmental Hazards

We indicate below our findings and advice regarding certain issues of an environmental nature. The issues identified below should not be considered an exhaustive list of matters to be considered.

5.1 Flooding risk

We have not undertaken detailed investigations into the potential for flooding of the land on which the property lies. However we have consulted the website at *www.environment-agency.gov.uk* of the Environment Agency and their information regarding the potential for flooding suggests that the area is not at risk from flooding.

5.2 Tree proximity

The proximity of trees to buildings can give rise to concern because structural damage can be caused by root systems growing around, under and sometimes through foundations and subterranean walls. The risk of damage caused by tree roots depends on;

- the proximity of the tree to the building concerned
- the height, age and species of tree
- the design and depth of a building's foundations
- the type of sub-soil

There are 2no. Eucalypts and 1no. Cypressus trees in close proximity to the building, which are considered of sufficient size to merit concern. The growth of these trees should be monitored and, if necessary, controlled in due course.

Eucalypts

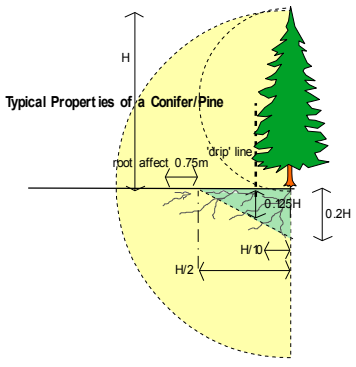
Eucalyptus species are a large tropical genus, of which some species grow well in Britain, mainly the cider and snow gums, with the blue gum in mild coastal areas. Most are exceptionally vigorous and they all appear to be high water demanders. They will tolerate heavy pruning, and many will sprout if cut to near ground level, but regrowth is vigorous and needs to be kept under control.

They can reach heights of 15 - 25mtrs depending on climate and soil conditions, at a rate of 1000mm a year[1] in some cases. They have strong root activity and the root system can extend to considerable depths in dry climates.

Cypressus (Thuja)

Cypressus is an evergreen and can reach heights between 20 - 30mtrs (Lawson's & Monterey) depending on health, environment and soil conditions.

They have a fast growth rate of around 600mm per year and weak root activity[2]. Maximum tree-to-damage distance recorded in the Kew survey was 20mtrs, and 50% of cases occurred within 2.5mtrs[3]. Life expectancy between 50 - 100 years and capable of withstanding surgery when young, although difficult to keep their architectural appearance. Less tolerant when older.

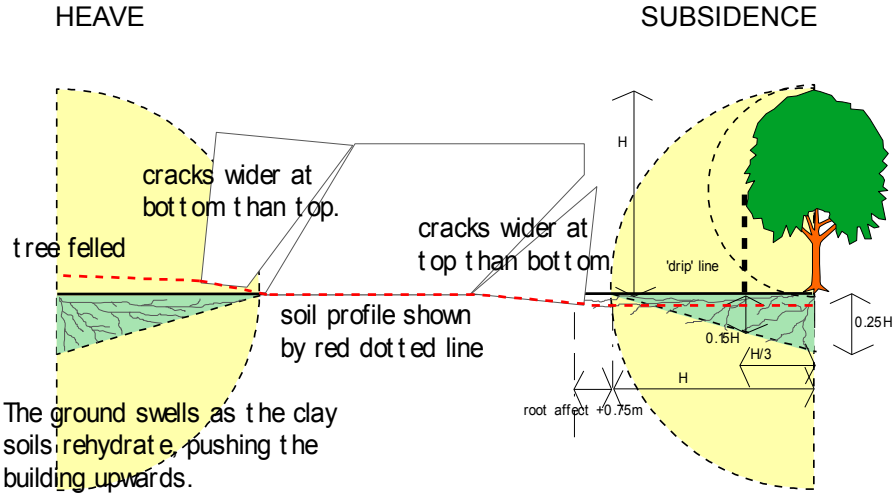


Typical proportions of a Cypressus.

[1] Richardson & Gale (1994) *"Tree Recognition"* Richardson's Botanical Identifications
[2] Richardson & Gale (1994) *"Tree Recognition"* Richardson's Botanical Identifications
[3] Cutler & Richardson (1991) *"Tree Roots & Buildings"* Longman Scientific

The root zone shown is conservative as it will often equal, or even exceed, its height. The Cypressus has an aggressive root system and is involved in building damage often because it has been used in the past as a border tree.

Surgery can be disfiguring unless carried out by professional arboriculturalist, however if the trees are left to grow as they are diagonal crack will start to appear as in the diagram below.



General proportions of a broad leaf tree showing typical root influence zone in relation to height, potential depth of desiccation and microclimate sphere.

5.3 Radon risk

Radon is a radioactive gas that occurs naturally in the ground. It occurs when uranium decays. Uranium is found in small quantities in all soil and rocks. Decaying uranium turns into radium and when radium, in turn, decays, it becomes radon. Uranium can also be found in building materials derived from the rocks.

Radon rises through cracks and fissures in the ground into the air. Outdoors, radon is diluted and the risk it poses is negligible. Problems occur when it enters enclosed spaces, such as a building, where concentration levels can build up. When this happens, it can cause a significant health hazard to the occupants of a building by increasing the risk of lung cancer.

Radon is everywhere, but usually in insignificant quantities. General technical information on Radon can be obtained from the Health Protection Agency (HPA). Their website address is www.hpa.org.uk

If Radon, as an environmental hazard, is something that you are particularly sensitive to, further investigations and, if necessary testing, should be considered for a more accurate assessment of the site's exposure.

5.4 Electromagnetic fields and microwave exposure

There has been concern that electromagnetic fields from both natural and artificial sources can cause a wide range of illnesses such as blackouts, insomnia and headaches to depression, allergies and cancer. Artificial sources commonly comprise overhead or subterranean high voltage electrical power cables.

It is suggested that the electrical discharges from these high voltage cables upset the balance of minute electrical impulses employed by the human body to regulate itself in much the same way as television and radio signals can be disrupted.

Controversy and uncertainty prevail with regard to this matter; no strong evidence that is generally accepted to be conclusive has been developed to prove or disprove this alleged hazard. More information is available from the National Radiological Protection Board’s website. You should be aware that the presence of power cabling in the vicinity of a building can affect its value and liquidity in addition to the health of those occupying the property.

For this reason, during our inspection we looked for any visual indications that electrical power cables are located under, on or over the property or adjacent to it. We have not undertaken any separate inquiries with the relevant statutory authority however.

We did not note any high voltage cabling in the vicinity of the property, but such cabling might exist below ground out of sight.

5.5 Invasive vegetation

We did not note the existence of any Knotweed or Hogweed around the property. However we have not carried out a thorough inspection of the whole garden.

Japanese Knotweed was introduced into the UK in the 19th century. It grows vigorously and can cover large areas to the exclusion of most other plant species. It has been known to grow through bitumen macadam, house floors and sometimes through foundations.

5.6 Wood Boring Insects (Woodworm)

Woodworm may manifest itself in a number of varieties ranging from 3mm in size to 25mm. Eggs are laid on or in the timber and the larvae that hatch feed and bore into the timber which consequently results in weakening of timbers and a risk to the structural integrity of the property. Treatment of active woodworm involves applying insecticides to the timbers. In extreme cases where the timbers structural integrity has been compromised by the attack, replacement may be the only solution.

We have not undertaken a detailed investigation into the potential for Woodworm as this would cause for intrusive works to be carried out, however no infestation was noted to any of the inspected timbers and all timber floors felt firm underfoot indicating that all floor timbers were free from wood boring insects.

5.7 Fungal Decay (Dry Rot & Wet Rot)

Moist and damp conditions provide an ideal environment for fungal attack. In cases where the moisture content is over 20% this is classified as 'dry rot'. Fine grey strands of fungus spread through wood and other materials developing into sporophores which give off spores which in turn spread the fungus further. Timber suffering from dry rot becomes very dry and brittle and begins to fracture to such an extent that it can be broken and crumble by hand. When the moisture content is higher than 40% to 50% this is classified as 'wet rot'. The presence of wet rot in timber is recognised by a dark brown staining colour and splitting or longitudinal cracking.

Treatment of fungal decay is initially to remove the source of the dampness which is enabling the fungus to 'feed' and develop. Exposure works will then be necessary to determine the full extent of the damage caused. Following any repairs or replacement works it will be necessary to treat the timbers with an approved fungicide to safeguard against recurrence.

We have not undertaken a detailed investigation into the potential for Fungal Decay, however at the time of our inspection no decay was noted to any of the inspected timbers and all timber floors felt firm underfoot indicating that all floor timbers were free from fungal decay.

5.8 Damp

Tests were conducted with an electronic moisture meter at appropriate positions throughout the property (except where impermeable surface finishes, furniture, fitted cupboards and stored goods prevented access to take readings).

High readings were obtained in the following areas:-

- The rooms internally below ground level
- The front lounge and pantry area to the rear of the kitchen

Plaster on walls affected by rising damp can contain salts from the soil which are hydro-scopic and attract moisture from the air. Until such contaminative plaster is removed and replaced with new plaster, the walls will remain damp. It is normally necessary to remove the plaster from the affected walls up to a height of at least 1 metre above the floor and replaster.

Rising dampness is caused by the natural effect of moisture from the ground rising up through a structure by means of capillary action. This will occur where there is failure or lack of a damp-proof course. Rising dampness will inevitably lead to spoilt decorations, defective plaster, and the potential for rot to timbers, so creating an unhealthy environment in which to live.

It may be prudent prior to contract for specialist timber/damp reports to be obtained. All recommendations should be implemented.

5.9 Thermal Insulation and Energy Efficiency

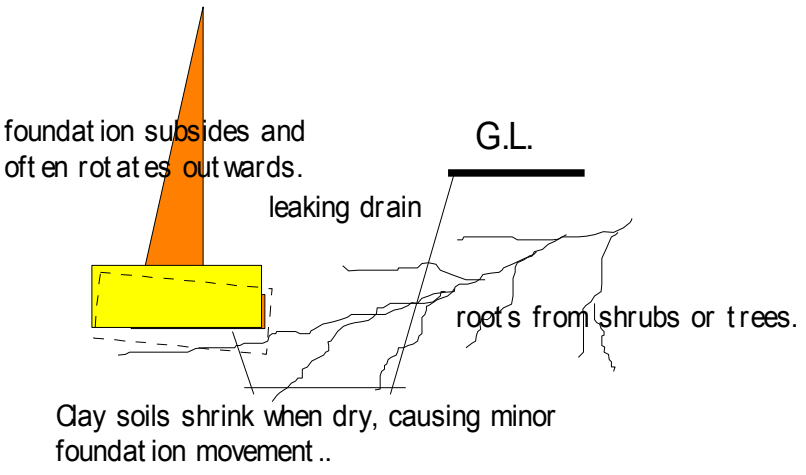
As part of the marketing process current regulations require the provision of an Energy Performance Certificate. Legal enquiries are advised to confirm that such a Certificate has been obtained. This document provides the usual information regarding advice on energy efficiency and thermal improvement, which will assist in potentially reducing heating expenditure.

6 Discussion

The property is a grade 2 listed building of some age, dating back to around the late 1500s. Consequently, it is very difficult to carry out any modernisation works to the property due to its listing. Any alterations internally or externally will come under the conservation officer of the local council, who will insist that authentic areas are retained such as beamed ceilings, plaster to walls, original roof construction, and the wattle and daub. However, on occasions it is necessary to repair certain areas which may become rotten or suffer from beetle attack, however even these areas will have to have permission and consultation with the conservation officer. There have been cases where wattle and daub has been found to be dangerous due to containing animal hair as previously stated and we would advise that it is tested.

With regards to the cracks noted to the front right hand wall, the diagonal aspect of the cracks, the fact they tend to increase in width with height and their general disposition is indicative of a minor episode of subsidence. The cause of movement appears to be clay shrinkage.

The timing of the event (the summer months), the presence of shrinkable clay beneath the foundations and the proximity of vegetation where there is damage confirms the shrinkage to be root induced. This is a commonly encountered problem, and probably accounts for around 70% of subsidence claims notified to insurers



How roots infiltrate into the clay soil beneath foundations and the resulting damage - outward rotation of the wall.

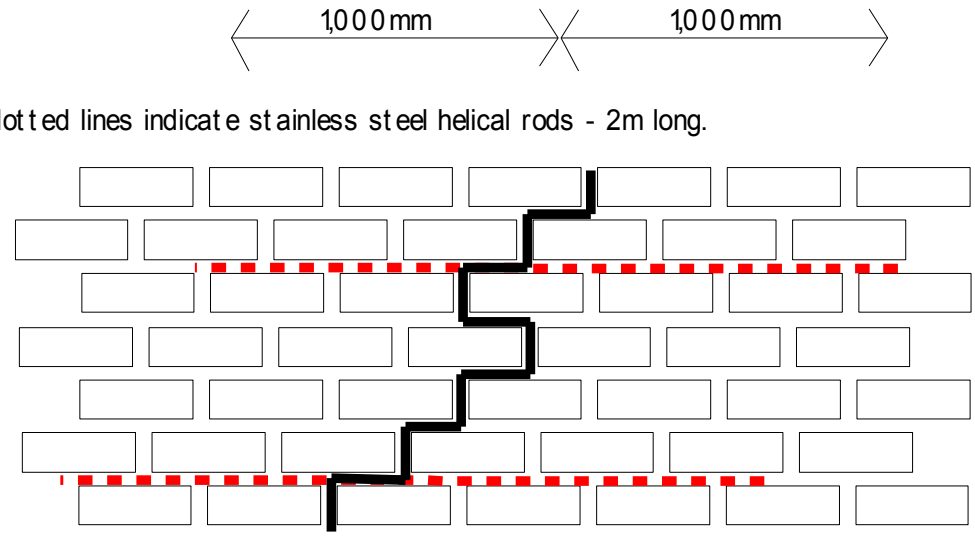
Fortunately, the cause of the problem (dehydration) is reversible. Clay soils will rehydrate in the winter months, causing the clays to swell and the cracks to close. Provided the cause of movement is dealt with (in this case, vegetation) there should not be a recurrence of movement.

Repairs should be carried out in accordance with the recommendations of the Building Research Establishment.

Damaged brickwork will be repaired by replacing any broken bricks and repointing cracks.

Internally, when cracks are in excess of 1mm wide, the underlying brickwork will have to be exposed. Any broken or cracked bricks will be replaced prior to covering with expanded metal and making good the plaster finishes. Cracks less than 1mm wide are usually filled.

Sometimes some form of strengthening may need to be incorporated.



Typical brickwork repair detail. Suitable for cracks over 2mm wide, and when active movement has been recorded less than 1 mm per annum. Cracks < 2mm wide can simply be filled.

An epoxy resin mortar is sometimes specified to strengthen the repair where the cracks are 4mm wide or more.

The roof is in reasonable condition, with it being re-thatched in 2000. It is only a straw thatch, which does not last as long as a Norfolk reed thatch. The crown has recently been re-thatched and the straw has been re-netted. There should be maintenance-free works to the thatch for some years to come. We did note that the thatch was flashed from the chimneys with lead, which is unusual as it is normally a cement mortar so as to seal the thatch directly to the chimney and prevent water ingress under the lead work.

A spark cap was noted to the left-hand chimney. However, care should be taken when using open fires that they are not used in very dry weather, as sparks from open fires can cause the thatch to ignite. We do not know whether the roof has been sprayed with a fire retardant and again advice may be required in this aspect from the conservation officer of the local council.

We would advise that a full damp and timber report is carried out at the property. The rooms internally were below ground level and we noted excessive damp within the front lounge and pantry area to the rear of the kitchen. This does not rule out damp in other areas. The ends of some tree trunk rafters were noted to be rotten externally, however, within the roof space they appeared to be in reasonable condition. Due to the extensive timber and due to the age of the timber, we would advise that it is checked by a specialist for any beetle or other associated wood attack.

The stairway to first floor within the right-hand side of the property had been repaired on several occasions with metal strapping. One of the treads, however, was broken, and may have been affected by beetle attack. This enforces the need for a full timber inspection.

Extensive Artex had been used around the property and due to its age will undoubtedly have an asbestos content. The amount of Asbestos will be low as it was used as a binder. However, if the Artex is removed, bearing in mind it is not part of the original construction, then it will require specialist removal by licensed contractors and disposed of at the licensed waste disposal site. This will be expensive. If the Artex is not touched, such as drilled or broken away, it bears no harmful effect. The

Artex should be regularly painted so as to seal in any fibres that may be surface generated.

A beam had been spliced within the rear room of the right-hand cottage at ground floor level, with only one bolt on the one side causing a distortion to the ceiling. This requires a proper repair.

The first floor area of the property only has 100mm wide brickwork, which is common for a thatched property, especially with beam construction. This therefore will be a colder area than the remaining section of the property. However, to up-rate it would take the character away from the property and again approval would be required from the conservation officer. If it was to be up-rated it could be done internally with timber and plasterboard studwork, with Celotex insulation between.

Due to the age of the property, most of the stud walls and ceiling areas were all lath and plaster, some of which were in poor condition, being excessively distorted due to the weight onto the original tree branch areas causing deflections over the years. Specialist advice will need to be taken if areas of plaster have to be renewed.

We are concerned with the state of the electrics around the property. We noted junction boxes within the thatch area externally and extensive exposed cables throughout the property simply nailed to timber beams. The consumer board was also old. We would advise that an up to date electrical system is installed throughout the property, with wires concealed where possible, and ducted sympathetically elsewhere. More fires are caused within thatched properties by electrical faults than any other problem. We consider the wiring around the property to be dangerous and attention should be given as a matter of urgency to rewiring the property and installing an RCB MCB circuit board.

7 Conclusion

The property is a grade 2 listed building dating back to the late 1500s. Consequently, any improvement to the property comes under the conservation officer of the local council and any works that are carried out to the building have to have local authority permission.

We consider essential works are necessary to the property and that the wiring needs completely overhauling, with a new consumer board installing so as to prevent the chance of electrical fire within the building.

No significant recent structural defects were evident, other than normal distortions associated with the age of property. A slight lateral spread had occurred to the front wall, which does not appear to be ongoing, which more than likely occurred as a direct effect of the over-thatching which occurred in 2000.

House insurance on a thatched property is very expensive due to the problems associated with thatch and fires. We would recommend that the thatch is sprayed with a fire retardant, subject to the conservation officer's agreement.

END OF REPORT

Matthew Baker BSc (Hons) MRICS
For and on behalf of **Allcott Associates LLP**

8 Estimated Costs

At this time we can offer little more than preliminary estimated costs for the works indicated above. However, based upon our experience of similar schemes we consider the estimated costs to be reasonable. These costs do not include any allowances for possible items of external/internal decoration. We must strongly advise against basing a firm financial judgement entirely upon the estimated costs stated. They are intended purely as a guide and must be treated with caution until detailed tender documents have been prepared and competitive quotations have been obtained. We recommend that quotations for the works are invited from reputable contractors. They should carry all necessary Liability Insurance and be affiliated to a recognised trade association and be prepared to provide an underwritten warranty relating to the quality of their workmanship. Agreement regarding the provision of such warranties should be obtained before entering into a Contract for the works.

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www.allcottassociates.co.uk

Birmingham Office
35 St. Pauls Square
Birmingham
B3 1QX
Tel: 0121 718 7008

Oxford Office
John Eccles House
Robert Robinson Avenue
Oxford OX4 4GP
Tel. 01865 479670

Leamington Spa Office
Ladbroke Farm
Banbury Road
Leamington Spa CV47 2BY
Tel. 01926 812380

Email: info@allcottassociates.co.uk