The Morton Partnership

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THE MORTON PARTNERSHIP LTD.

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Our ref: FEA\BEB\19127~02h

15 August 2018

Allistair Hunter
1 Field View Close
Colchester
Essex
CO4 5HD

by email prior to posting: allistairph@icloud.com

Dear Mr Hunter,

RE: RUNKINS FARM, LANGHAM LANE, BOXTED, SUFFOLK CO4 5HZ

It was a pleasure to meet with you on 8 August 2018 to review the property and to assess its condition.

You have appointed The Morton Partnership to look specifically at the remaining timber frame to the property and to provide a structural assessment of the frame and whether it would be considered salvageable for reuse as part of renovation proposals, or whether demolition is recommended.

I set out this letter initially describing the construction of the property and then continue with survey detail, concluding with my recommendations. Photographs referenced in this letter are as appended.

Brief Description
The property is two storey, with the central section forming the original structure where the timber frame of interest is located. To both the left and right-hand sides of the property (when viewing from the front elevation), there are 2No. extensions. Also, to the length of the original structure to the front elevation, there is a later addition lean-to extension (Photograph 01). To the rear there is a modern conservatory construction, centrally located. The property appears to have been rendered externally in a coarse, cement based render. The property is not Listed and is not within the curtilage of a Listed building or within a conservation area.

From visual inspection both internally and externally, it is clear that the front flank of the roof has been adjusted at some stage, likely at the time of the front extension, with the pitch of this roof reduced from its original detail by raising of the eaves plate. This is clear from viewing the left-hand side gable end (Photograph 02). Also, internally softwood later addition studs extended above the original eaves plate detail to provide the raised eaves level (Photograph 03). The roof structure has been replaced in its entirety and is a later addition softwood structure with plain tile roof.

The extensions to both the left and right-hand side of the property were not reviewed as part of our survey, although these are of masonry construction (Photograph 04) with rendered finish, as previously detailed.

The original structure (centrally) comprises timber frame construction with the remains of timber frame noted to the front elevation (Photographs 05 & 06), the two original gable walls (Photographs 07 & 08) and an internal partition (Photographs 09 & 10). The timber frame to the rear elevation has been lost in its entirety and is replacement masonry.

For the purpose of this survey detail, the two original gable walls and internal partition are described as Frames 1-3, with Frame 1 forming the original left-hand side gable (Photograph 07), and Frame 3 the original right-hand side gable, now forming a partition to the later addition extension to the right hand side of the property (Photograph 08)

There are 2No. beams located within the central section of the property, between Frames 1-3, which are assumed to have been installed at a later date to accommodate the introduction of a first floor.

First floor timbers (which remain only in part to approximately one-quarter of the first floor area) are softwood and are not considered to be original detail (Photographs 11 & 12).

The introduction of the fireplace and chimney to the front elevation is not considered to be original detail due to the interruption to the original timber frame detail (Photograph 13).

Overall, of the original structure, it is considered that approximately 40-50% remains as describe below:

- The roof structure is replacement with no original fabric remaining.
- The rear elevation has been replaced in masonry throughout its full length.
- To the front elevation, the timber frame remains in part considered to be approximately 50% of this elevation, with later addition fireplace detail cutting into the frame. 2No. door openings cut through the frame. Localised reconstruction in masonry at ground floor level to the left-hand side of the chimney (when viewed externally).
- Frame 3 remains only in part with the tie beam visible. Elsewhere the wall is considered to be masonry construction throughout.
- Frames 1 & 2 remain in-situ, with Frame 1 having been cut to accommodate door access through to the later addition extension (Photograph 14). The door access to Frame 2 is considered original detail (Photograph 15).

It should be noted that movement to the structure is visible. There is cracking which suggests progressive movement of the structure. This is visible by:

- Rotation of the rear masonry wall with significant lateral displacement towards the rear (Photograph 16).
- Rotation to the tie beam of Frame 1 (Photograph 17).
- Racking to the timber frame of Frame 1 (Photograph 14).
- Pulling away of connections visible particularly to Frame 2 adjacent to the front elevation (Photograph 18).

Metal strap details have been provided throughout, although these are considered to be a relatively crude detail and strapping detail has buckled, further suggesting progressive movement (Photograph 19).

The rear wall has rotated outward due to the loss of connection with the remaining structure, likely when this section was reconstructed in masonry and the roof structure replaced. From what could be observed, the tie beams do not appear to tie into the later addition roof structure and wall plate at eaves (Photograph 20). Therefore, the continuity of the structure has been lost and would need to be regained.

Opening up work had been undertaken ahead of my visit to allow a detailed visual inspection of the frame and its condition internally.

Survey Detail
This section is set out describing the timber frame in sections, detailing its structural form and condition.

Frame 1
Frame 1 comprises a three course brick plinth wall which supports the timber frame above.

The plinth wall appears to be reconstructed in a cement based mortar, either replaced or repaired at some stage. There is a high level of moisture noted to the plinth wall, migrating through to the lower

section of the sole plate causing decay (Photograph 21). Alongside this there is a light brown powdery residue which suggests active infestation.

The brick plinth wall supports a sole plate (175mm width x 125mm depth) which in turn, supports the timber frame above. The sole plate has been cute to allow the door opening through to the Kitchen which is a later addition extension (Photograph 22). The sole plate has decayed through its lower section through approximately 10-30mm in depth (Photograph 23). Removal of decayed material and replacement with packing timbers or slate shims would be required, alongside rising damp consideration to prevent future decay. The external face of the sole plate appears to have deteriorated suggested by the timber frass within the debris adjacent. Full observation was not possible due to kitchen units remaining. It is likely that a face plate repair would be necessary to regain the structural integrity of this member and provide sufficient bearing for the studs above.

The timber frame comprises studs approximately positioned at 550mm centres, varying in size (125-170mm width x 100mm depth). The studs have been cut centrally to the frame to support a later addition beam and similarly the frame has been cut towards the rear of the property to accommodate door access through to the later addition extension (Photograph 24).

There is diagonal bracing to this frame. At original eaves height there is a tie beam. Above the tie beam, the frame detail is unknown.

The studs to Frame 1, to their base, remain in fair condition although there are locations of infill cement repair (Photograph 25) which would increase the likelihood of moisture and result in decay locally. The outside face of studs in locations have decayed with loss of fabric through at least 50% of its depth and, as a minimum, would require face plate repair in locations, to regain structural integrity (Photograph 26). In locations, full replacement may be required.

To the lower sections of the studs, these generally remain in good condition and fixed to the sole plate. However, at high level their connection has been lost to the tie beam due to the rotation of the tie beam. This tie beam has also lost its connection at both ends, no longer providing sufficient lateral restraint between the front and rear elevations and roof structure.

The tie beam shows signs of decay to its external face, which will require a minimum of face plate repair. To the corners of the tie beam, there is evidence of decay to the top face of the member, possibly due to infestation. When prodded with a knife, the member was dry and flaky with brown residue. Similar detail was noted to the corner post to the front of the property relating to this frame at high level. To these members, splice repairs would be necessary to ensure sufficient section of timber to provide a sound connection to regain lateral restraint across this frame (Photographs 27 & 28).

Small sections of wattle and daub remain to this frame. Elsewhere, Gypsum plaster is evident suggesting loss of wattle and daub and replacement with more modern material. There is also evidence of foam insulation infilling gaps to the timber frame (Photograph 29). These materials alongside the cement based render observed externally will reduce the ability for the frame to 'breathe' and so there is a risk that decay may be to a greater extent than currently observed. This could only be confirmed on full removal of the internal and external finishes.

Frame 2

This frame forms the partition wall within the original section of the property.

The sole plate to this frame is not constructed off a plinth wall and sits directly at ground level. The floor structure to the original property has been replaced at some stage with a concrete slab/screed and this returns up the face of the sole plate to Frame 2 in part (Photograph 30). As a result, the sole plate is partially encased, which has contributed to its decay which is considered significant, hollow through the majority of its section (Photographs 31 & 32). It is likely that full replacement of the sole plate would be required to this frame.

The studwork supported off the sole plate remains in fair condition. This comprises vertical studs through to a mid-height wall plate which provides lintel detail to a door opening within the frame. There is diagonal bracing either side of the door.

Above the wall plate, studs continue up to rafter level. Wattle and daub remains through the upper section of this wall. The upper studs are light brown in colour and there is a light brown residue further suggesting active infestation (Photographs 33 & 34).

To Frame 2, there are local defects to connections with some loss of connection, and 1No. replacement stud towards the rear of the property (Photograph 35).

To the tie beam at original eaves level to this frame, there is no connection to the rear wall at the eaves plate of the roof structure (Photograph 20). To the front elevation of the tie beam there is movement visible of at least 40mm in the original timber lap joint between tie beam and eaves plate (Photograph 18). Strapping detail has been provided thought to assist with movement, although this is not considered to be a suitable detail. This movement is as observed to Frame 1 and relates to the loss of continuity of structure with the alteration undertaken to the rear wall and roof structure.

Frame 3

To this frame, only the tie beam remains and this has been cut to accommodate door access at first floor level (Photograph 36). Otherwise, the tie beam remains in fair condition from what could be observed, although it should be noted that this bears onto masonry below and is embedded in masonry in part and therefore is likely to have decayed to its faces which were not visible, as the member has been unable to 'breathe'.

Front Wall

The later addition fireplace centrally located to the main room of the original property disrupts the original frame of this elevation, with evidence of this having been cut to accommodate the fireplace detail (Photograph 13).

Below the eaves plate, this is infill masonry down to the timber lintel creating the fireplace opening (Photograph 37). When looking at the fireplace internally to the right-hand side, this has been reconstructed in masonry. To the left-hand side, the frame has been cut to accommodate door access through to the later addition extension to the front of the property.

Original timber frame studs remain only through the upper section of this wall, with only 1No. full stud remaining at ground floor level forming a frame to the door access (Photograph 38). The remaining 4No. studs to the upper level are approximately through a length of 800mm. These studs remain in fair condition.

The eaves plate above these studs has suffered loss of fabric to its underside (Photograph 39). This relates to a combination of localised decay and removal of fabric to accommodate alterations over time. It is likely that additional fabric will need to be scarfed to this member to improve its structural integrity.

To the remaining section of the front elevation (observed to the adjacent room which houses the stair access to first floor level), there is a section of original timber frame comprising sole plate detail supported off a brick plinth wall (Photograph 06). This brick plinth wall is thought to be original detail constructed in soft red brick and lime based mortar. This section remains only through an approximately length of 1.5m with a further door access cut through the frame and plinth wall.

The plinth wall has deteriorated due to moisture ingress and the sole plate above has discoloured and is soft. The remaining section of sole plate does not appear to be connected at either end to adjacent structure. It is likely that this section of sole plate would need replacing with improved connection detail to adjacent structure (Photograph 40).

The stud wall detail above the sole plate to this section comprises two studs with diagonal bracing. 1No. stud has decayed at low level with localised loss of fabric (Photograph 41). To the second stud, there is some loss of fabric to its external face (Photograph 42).

Above this section at first floor level, timber frame remains through to original eaves plate level (Photograph 43) Above this, later addition softwood increases the frame height to the new eaves plate position. The original timber frame detail remains in fair condition, although the eaves plate is soft to its underside and is dry and flaking, suggesting infestation (Photograph 44).

Rear Elevation
There is a section of masonry visible externally, which is constructed in soft red brick and lime based mortar. There is cracking above the door access up to 10mm in width (Photograph 45), with the wall rotating outwards, as previously detailed.

Conclusions and Recommendations
At first glance, the timber frame appears to be in fair condition due to a protective coating applied internally at some stage. However, on closer inspection there is softening to the timber at low level due to moisture ingress and elsewhere throughout the frame, due to infestation, which is thought to remain active. This assumption is made as a result of the considerable amount of light brown residue observed around the frame.

Of greatest concern is the loss of continuity of structure and the resulting failure observed with likely progressive movement. This relates to the loss of the original rear wall and roof structure. Reconnection of the principal structural elements needs to be established throughout to ensure future integrity.

Due to the sections of timber frame which have been lost, particularly to the front elevation, the only sections of original timber frame considered to have any continuous structural integrity are Frames 1 & 2. However, these are considered only continuous throughout their frame and not sufficiently connected to adjacent structure. These frames also show sign of decay, with Frame 1 significantly racking alongside rotation of the tie beam.

From reviewing the remaining 40-50% of the timber frame to the structure, it is considered that less than 70% of this could possibly be saved.

It is considered that to retain the original timber frame that remains, significant repair work would need to be undertaken mainly relating to regaining overall structural integrity of the property with the remaining frame that remains, alongside replacement sections of timber frame and repair. Currently, the movement observed is causing stress on the frame, particularly to Frame 2.

Of course, it is possible to save all buildings with justification to do so. What remains of the historic fabric to this property is not considered to be highly significant, with approximately 35% of overall original timber frame useable in any renovation project.

Due to the extent of changes to the property over time with loss of original historic fabric, resulting in the structure defects identified, it's significance is considered as moderate. Consideration should therefore be made for demolition of this non-Listed asset.

I trust that the content of this letter report provides you with sufficient detail at this time to assist in moving your project forward. Should you require any further information or clarification relating to the content of this letter report, please do not hesitate to contact me.

Yours sincerely
FOR THE MORTON PARTNERSHIP

FRAN ADNAMS

Encs Photographs

Photograph 01

Photograph 02

Photograph 03

Photograph 04

Photograph 05

Photograph 06

Photograph 07

Photograph 08

Photograph 09

Photograph 10

Photograph 11

Photograph 12

Photograph 13

Photograph 14

Photograph 15

Photograph 16

Photograph 17

Photograph 18

Photograph 19

Photograph 20

Photograph 21

Photograph 22

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Photograph 25

Photograph 26

Photograph 27

Photograph 28

Photograph 29

Photograph 30

Photograph 31

Photograph 32

Photograph 33

Photograph 34

Photograph 35

Photograph 36

Photograph 37

Photograph 38

Photograph 39

Photograph 40

Photograph 41

Photograph 42

Photograph 43

Photograph 44

Photograph 45