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Mrs Morris
Stone Cottage
Flowton Road,
Somersham
Ipswich, Suffolk

JRG/12/235
27 September 2012

Dear Mrs Morris

Stone Cottage, Somersham, Proposed Conversion of Outbuilding- Engineers Appraisal.

Further to my site inspection at the above (17/09/2012), I am pleased to report the following.

The existing structure is deemed to be suitable for conversion to residential use subject to the work and comments contained within the following report;

The building lies to the east of the main house amongst trees and with the ground sloping steeply away from the North wall. There are several changes in level across the site which the British Geological Survey indicates as Boulder Clay bordering Sand and Gravel deposits.

The structure comprises a single story with a clay pantile duo-pitched and gabled roof with weatherboarded timber frame walls on brick and flint plinths. The attic floor is joisted and partially boarded with internal ladder access; I understand it is not intended to use this area as habitable space.

Existing footings (where inspected) are brick on concrete strip (150mm O/A projection) founded in stiff clay subsoil at a depth of +0.45m below ground level. The addition of plasterboard linings and insulation associated with the conversion will result in a nominal increase in loading to the foundations. The resulting soil pressures will not be excessive and underpinning to accommodate this is not considered to be necessary.

Shallow foundations on clay subsoil are prone to movement due to variations in soil moisture content. Where conditions around the building are uniform and consistent, the seasonal movements are relatively minor and the flexibility of a timber frame structure will accommodate such movement without major damage. It is only when local external influences such as leaking pipes or root growth from nearby vegetation result in localised moisture changes that more severe movement and damage occurs.

A crack was noted to the plinth on the East gable suggesting some settlement to the North facing wall, this could be associated with the change in ground level here and/or the presence of trees.
It is considered that the cracking is likely to be due to shrinkage of the clay subsoil and that further movement is possible. Continuing settlement is not considered likely to be significant enough to compromise the stability and serviceability of the structure as a whole though it may result in cracking to new internal finishes. If the risk of damage to finishes is not considered acceptable then consideration should be given to general improvements to the foundations.

Plinths in general are in good condition and with the exception of the crack noted above and will be suitable for the proposed use.

Timber frame walls where accessible were found to be in good condition and are adequately structured.

The existing roof structure is a traditional collared purlin arrangement and is generally in good condition. The timbers appeared to be sound and of adequate proportion and are as I understand reclaimed from a previous structure (as are those forming the walls).

General Works Required For Conversion:

1) a. Repair crack to plinth and pack up to timber frame (if risk of future cracking is accepted) or:
   b. Underpin/improve existing foundations.
2) Possible localised repairs/improvements to timber frame and roof.
3) Replacement of ground floor with insulated build-up.
4) Insulate and weatherproof frame and roof/ceiling.
5) Replace windows and doors with appropriate double glazed units.
6) Connect/install services (water, drainage, electricity, phone & heating).
7) Associated landscaping and access.

We would be happy to provide further detailed advice and drawings for building regulations approval should wish to proceed further, as a guide our costs for the various elements would be within the following (excluding VAT):

- *Survey structure and produce structural calculations and details for existing frame subject to increased loading: £480*
- *Additional sum for design of foundation improvements (if requested): £500.*
- *Produce construction drawings and details for building regulations approval: £750.*
  (I note that further information with regard to energy efficiency will also be required by building control which we do not provide, we would be happy to recommend an appropriate consultant however – an allowance of £200 + VAT should cover any additional costs).

I trust this is clear and sufficient for you present needs, but please feel free to contact me if you have any queries or require any further information.

Yours sincerely,

James Griffiths