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Structural  
Inspection Report  
at  
Beacon Mill,  
Ravenscar,  
North Yorkshire  
Contract C10140  
Nov 2010



## Summary.

The brief from the Client, Mr and Mrs F Stoll, via Francis Johnson and Partners Architects, was to carry out a structural inspection of the above property and to report on the feasibility of converting the buildings for domestic use in accordance with FS A4 sketches. The report is intended to accompany a planning application only and its use is intended solely by the Client. The property is currently un-furnished and un-inhabited; no intrusive examination was requested or undertaken at this stage. Only points of structural significance have been noted in the following report.

Please note that we have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

## Report.

The mill consists of an isolated, circular, stone tower overlooking the North Sea near to Ravenscar, North Yorkshire. The actual mill is redundant and is basically a tapered tube of stone; it currently has no roof, internal floors or stairs. The walls are of dressed stone with lime mortar joints, they are some 650mm thick near to the base becoming thinner towards the top of the tower. There is an intact ring of stones around the top and a stone plinth at the bottom of the tower, a stone staircase and platform connect the mill to the adjoining stone-built barn which has a clay, pantiled roof and an undercroft.

The mill walls are penetrated by a number of window openings; these have substantial stone lintels and cills. The pointing is generally poor and there are a number of minor cracks on elevation W, about half way up the tower, some repairs have been made to the walls using brickwork.

There is a long vertical crack running from the base of the tower on elevation X up through the first floor window to some 1.5m above, this varies in width from about 20mm near to the base to becoming narrower higher up, this appears to be quite old.

There are a number of wide openings to the undercroft of the barn on elevation X; the lintels over these openings are of differing constructions. The end openings have timber lintels over and these appear to be either rotten or fragile, the central opening appears to be spanned with a concrete lintel. There is a small window underneath the eaves.

Beacon Mill, Ravenscar, North Yorkshire  
Cont'd..



The headroom to the undercroft is quite low and the timber floor joists are visible in the soffit. There are signs of woodworm infestation and damp in the floor and the rear wall of the undercroft was very damp.

The gable elevation of the barn overlooks a very damp field and damp in the walls or foundations may be a problem here. There is a semi-derelict, lean-to stone outbuilding against this elevation. The barn wall is generally square and plumb although there is some significant cracking to the top right hand corner.

The roof of the barn is in quite poor condition with a number of gaps and slipped tiles, the ridge is quite 'wavy'.

Elevation Z of the barn contains signs of old, blocked up windows and also old cracking some of which appears to have been repointed. This elevation overlooks a waterlogged 'ditch' and, as with the gable elevation, damp in the walls or foundations may be a problem here.

The door to the barn was locked and we could not gain access to the inside.

## Assessment and Recommendations

The building appears to be in quite a reasonable structural condition considering its age and location. We have seen Mr Stolls proposal drawings for residential conversion and recognise the significant building works required in order to carry out this work. We assume that all this work will accord with the relevant permissions and Building Regulations. As a minimum we would expect the following additional repairs to be carried out; additional external drainage to the site, demolition of the small lean-to shed, re-roofing of the barn, treatment of any existing timber which is to remain in the structure, repairing and repointing of all the mill and barn walls, close inspection of lintels over openings and replacement as necessary.

We would also recommend that the significant crack in elevation X of the mill is reinforced and we suggest that either a couple of steel hoops be put around the tower or full perimeter metal reinforcement be inserted into the mortar bed joints using resin and helifix wires or similar. This work should be specified and supervised by a properly qualified and experience structural engineer.

The top right hand corner of the barn should be taken down and rebuilt to repair the cracked zone.

All materials and methods should use approved techniques and with suitable lime mortars.

In conclusion we feel that it is possible to convert these buildings to residential use as shown on Mr Stolls drawings with minimal structural demolition or rebuilding.

Report by:



Eur Ing Alan Mitchell BSc, CEng, MIStructE

5<sup>th</sup> Nov 2010

Appendix 1



Photographs



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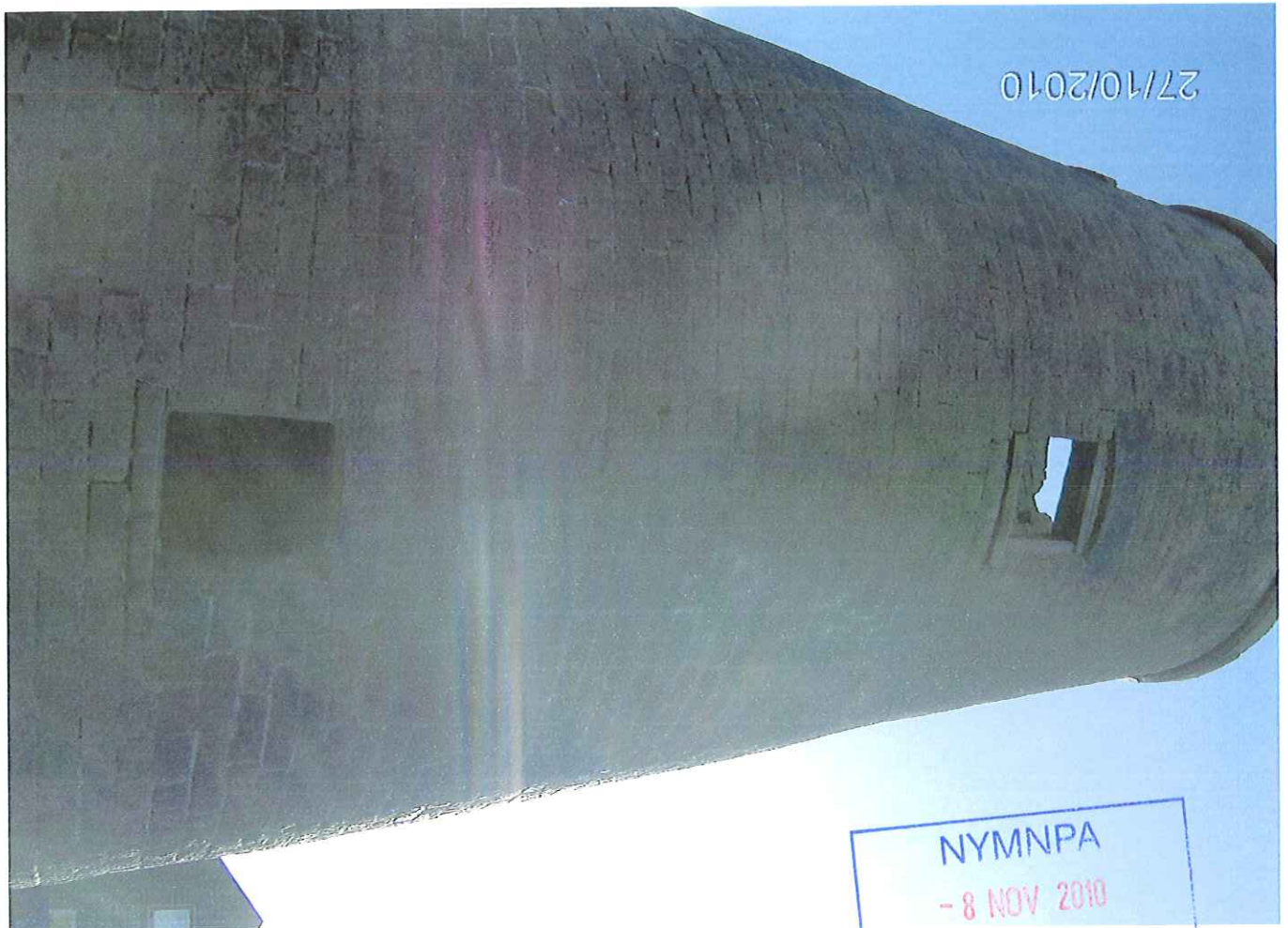
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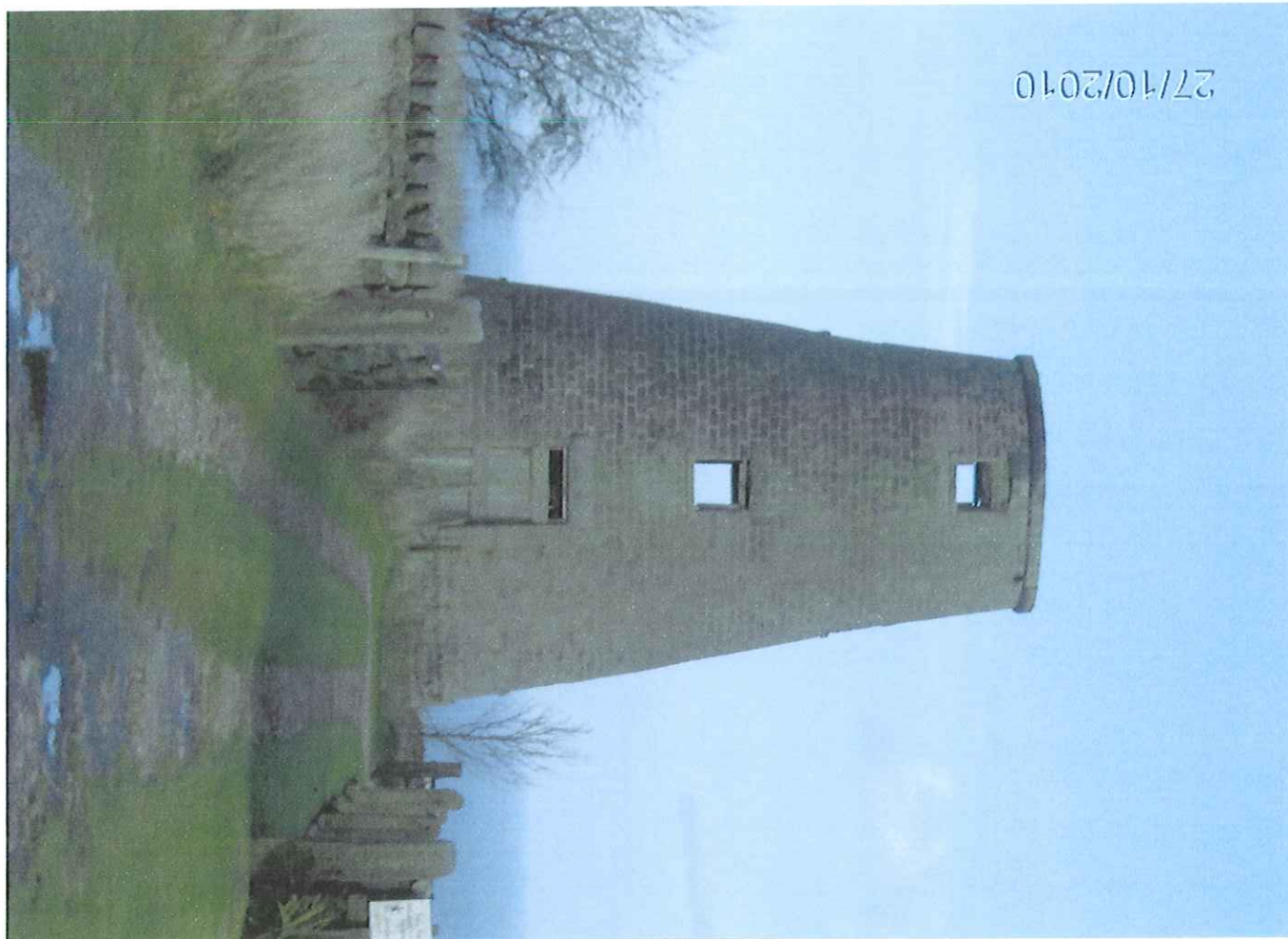
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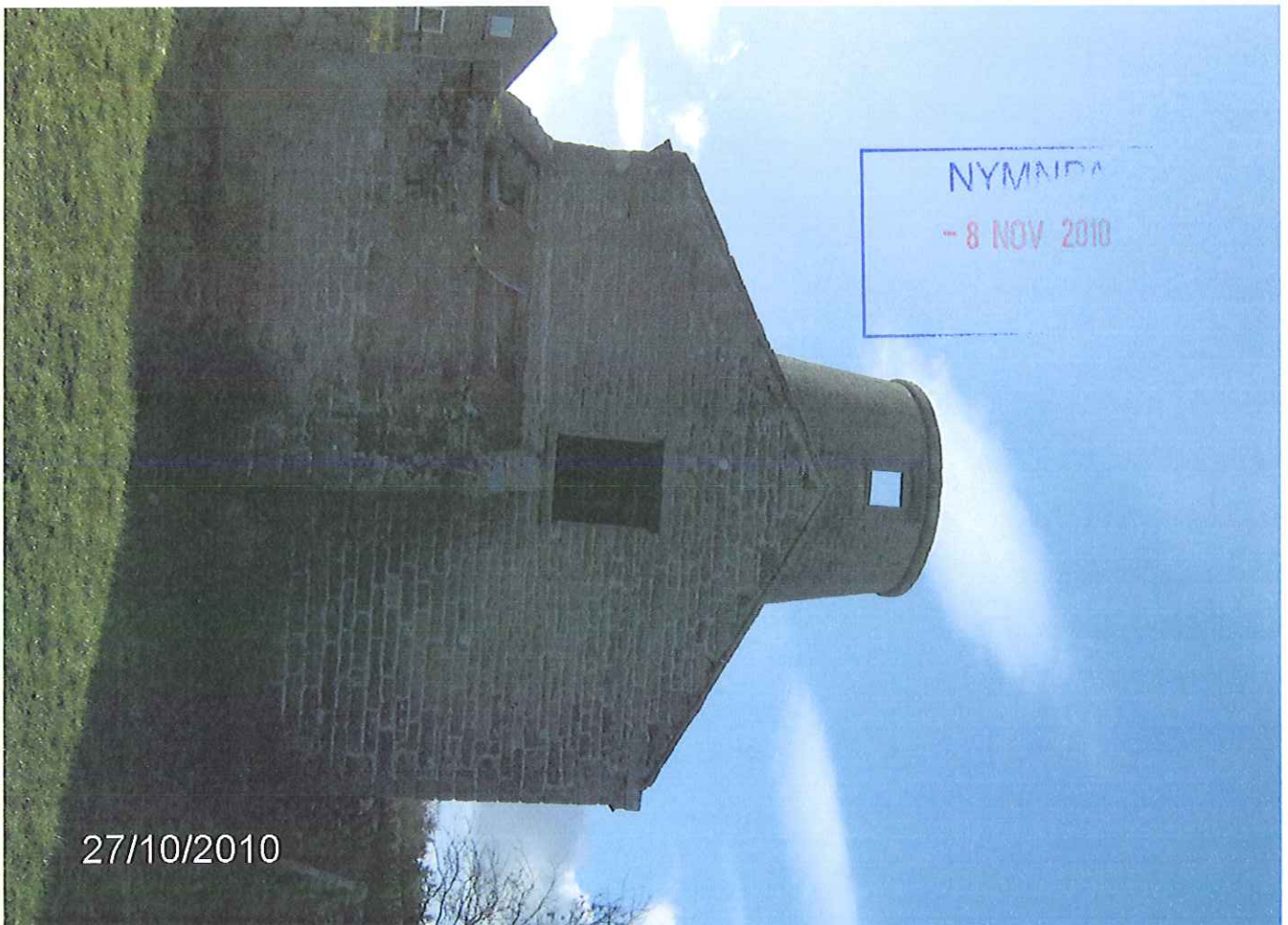


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Appendix 2

Plan of Mill

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