Proposed Barn Conversion at Lightwood Farm Barns. Ashbourne Rd. Cheadle.

Preliminary Structural Survey.

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Preliminary Structural Report on Lightwood Farm Barns. Cheadle.

Introduction

Following instructions from Mr.P.Mc Cormack. a surface inspection was made of Lightwood Farm Barns circa November/December 2014.
Trial holes were undertaken in order to inspect the foundations &prevailing ground conditions.

This report is restricted to the structural matters discussed and does not include details normally contained in a Chartered Surveyors report by other specialists.

It is assumed that further more specific reports, if required, will be obtained by the client and any omission of comments regarding structural elements will not imply that they will comply with current standards, but only that we were unaware or could dot detect any obvious signs of defects in these elements.

The past history of the site has not been established from past records, maps or any results of the effects of past or future mining works and may need further investigation.

The prime elements & features of the barns comprise:

The Westerly Wing: Main two storey building of brick & tile construction including a single storey brick & tile former milking barn & agricultural storage area. There is also a single storey brick & sheet roof lean- to construction.

The Northerly/ Middle Section: Main two storey building of brick & tile construction.

The Easterly Wing: Main two storey building of brick & tile construction.

Roof Cladding: local plain blue clay fired roof tiles.

Roof Construction: Traditional construction common rafter at close centres & long span purlins onto timber roof trusses.

Elevations: Generally of red common brickwork with some small painted areas.

Ground Floor Construction: Typical mixed agricultural hard surfaces with some later replacement concrete floors.

First Floor Construction: Traditionally constructed suspended timber joists spaced at even centres with robust timber down stand beams supporting joists at wide spacings and some brickwork supports to joist ends.

Site Levels: Fairly level with slight natural incline from South to North & little Change in level from East to West.

Trees & Vegetation: Generally none in close proximity to the Barns.
Please refer to Tree Survey for remainder of the site.

Overview: This list is intended purely as an indication of the structural stability & general condition of the existing buildings.

Westerly Wing & Annex
Roof line moderately even with some deflection adjacent
to gables & the South & West roof intersection.
Main roof in reasonable order with some mid span minor deflection.
Eaves brickwork line generally straight & even.
Generally the elevations are in fair to good order
Some brickwork damage to Southerly gable end to store roof
intersection & lean to construction.
Some perished brickwork faces.
Some timber lintels deflected.
Generally low level brickwork jointing is perished at ground level.

Northerly/Middle Section
Roof line moderately even with some minor deflection adjacent
to gables & the East &West &roof intersection.
Main roof in reasonable order with some mid span minor deflection.
Eaves brickwork line generally straight & even.
Some perished brickwork faces
Generally the elevations are in fair to good order
Some minor historic damage to masonry above door & window openings
Some timber lintels deflected.
Generally low level brickwork jointing is perished at ground level

Easterly Wing
Roof line moderately even with some minor deflection adjacent
to gable & the Easterly roof intersection.
Main roof in reasonable order with some mid span minor deflection.
Eaves brickwork line generally straight & even.
Some perished brickwork faces.
Generally the elevations are in fair to good order
Some minor historic damage to masonry above door & window openings
Generally low level brickwork jointing is perished at ground level.

Internal Inspection

General Overview:
Ground floors floors are solid but are uneven throughout.
Timber floors are generally in poor condition.
Roof construction generally in fair order with some
roof trusses, purlins rafters,wall plates &lintels requiring some replacement
or local repairs.

Due to the higher ground level to the Easterly elevation it may be necessary to incorporate approved tanking as a remedial measure to avoid damp penetration.

There were no major structural defects to the interior of the buildings

Trial Hole Investigation

Trial Hole#1Located midway along East Facing Wall of Easterly Wing

Brickwork sitting on sandstone blocks as footings
Underside of foundation circa 750mm below ground level
Foundation width circa 450mm.
Supporting soils, clean compact sandy soil with some small gravels.
Estimated allowable ground bearing pressure: 100 -125kN/m2

Trial Hole#2Located midway along North Facing Wall of Northerly Middle Wing.

Brickwork sitting on sandstone blocks as footings
Underside of foundation circa 750mm below ground level
Foundation width circa 450mm.
Supporting soils,clean compact sandy soil with some small gravels.
Estimated allowable ground bearing pressure: 100 -125kN/m2

Good ground in both trial holes with no evidence of any significant settlement to the foundations.

It should be noted that additional trial holes may be required at the request of the Building Inspectorate.

Conclusions & Recommendations

Overall Structural Conditions

Foundations: Based on the evidence of the trial holes and general condition of the walls relative to foundation settlement, it is reasonable to conclude that the existing foundations will be adequate for the existing & proposed domestic loadings.

Some remedial underpinning or new foundations may be required however overall the foundations are suitable for the proposed domestic loadings.

Walls: Overall it is concluded that an estimated 90% of the existing walls will require minimal remedial attention, re-pointing and the replacement of damaged brickwork.
Existing dilapidated structures would require remedial work &re-roofing.

New Steelwork: The amount of new steelwork for structural support will be minimal and only required where existing timbers are to be retained but do not comply with current standards and codes of practice.
The roof configuration would need be determined following full exposure.

Overall Structural Stability: The existing buildings are generally considered to be robust and in our opinion would be ideal for conversion for domestic, residential accommodation.

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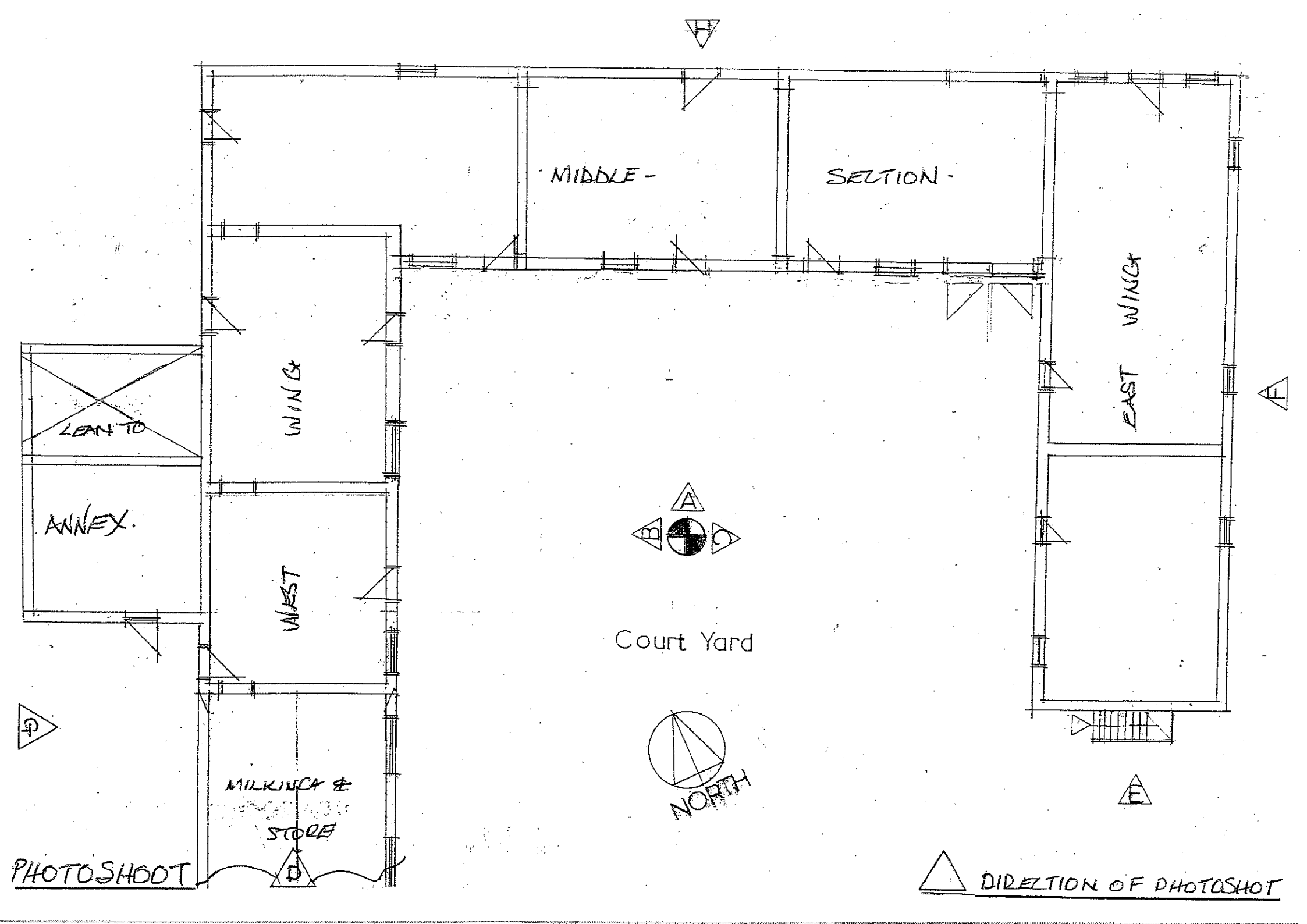
Chartered Architect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