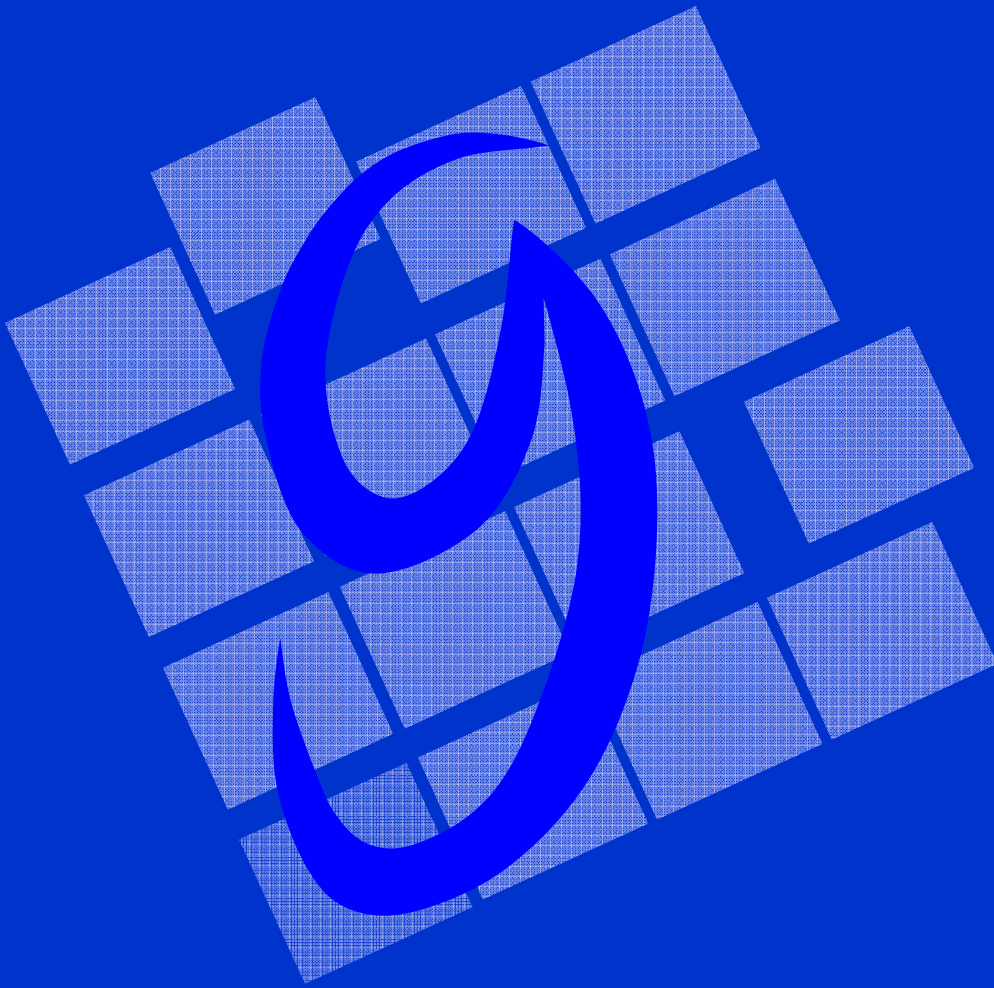
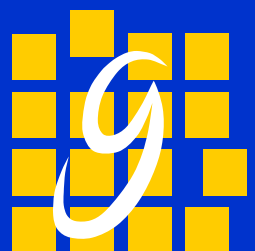




**Condition Survey
Ruabon Brickworks
Haford Road
Johnstown
WREXHAM**



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Condition Survey @ Johnstown, Wrexham

Date of survey: Tuesday 11th August 2009
Weather Conditions: Sunny and Dry
Undertaken By: Robert Tait and Penny Smith

General Description

Site comprises the following discreet areas:

- original complex and extension fronting Haford Road running approx North to South
- to west and rear of main complex a newer single large works complex and to the south independent garage works.

The original complex has been much amended over time but its construction timeline is unclear from the visual examination, however the central portion is dated as late 19th Century. Generally this portion (A) and the areas lying to the North (B) and South (C) of it are of similar construction. This takes the form of a single storey open shed with multiple bays. The high level roof is of timber construction and originally appears to have had a clay tiled covering. Although some areas of the original remain much of the roof is now covered with what appears to be asbestos cement sheeting. The roof is supported directly of load bearing brickwork external and internal walls with piers. In some areas internal walls have been replaced with steel columns.

To the Front (East) of part A newer brick areas have been added to form a courtyard which is now used as office space. In the older construction a limited area of upper floor exists to form a two storey area. To the rear (West) of part A a larger area of upper timber floor exists this having been used as the works canteen.

Area B has been extended to the east at its northern end, 5 gable bays having been extended, there is evidence of some further extrusions having being removed.

Area C has also been extended to the East, this time over its entire length with the original front wall being replaced by steel columns. The front load bearing wall appears to be more modern and is a combined brick/ concrete block construction.

A further load brick bearing construction has been added to the south of C (D) this again being multi - bay open storey but with a significantly lower roof line.

The main complex is completed by a short brick link corridor to the south of D connected to (E) a Steel Framed industrial type shed of contemporary design.

Walls are a combination of brick dado panels with sheeting above and a sheeted roof. Sheeting is of a concrete type.

To the rear the single storey works complex (F) is again a contemporary steel framed industrial type shed with principally brick cladding to wall and a steel sheeted roof.

The separate garage is a load bearing brick structure with a timber roof.
Comments on Condition

Various areas of cracking to the supporting brickwork to area C was apparent however no intrinsic overall patterns were discerned and specifically nothing which might indicate any lack of foundation performance. Specifically the east corner of the southern most extended bay has failed as eaves level this possibly being related to adjacent demolition works. Very noticeable out of plumb of the brickwork was noted both to the North side wall and correspondingly to the east west running internal walls. Some areas of significant internal leaning of the upper gable walls were apparent. There were numerous areas of obvious water penetration through the roof with there being significant water staining to timber beams supporting the internal valley gutters. It was noted that the north external gutter had significant vegetation growth and therefore it may be assumed that the internal gutters would have had a similar lack of maintenance. Although the timber roof trusses in the main appeared adequate there was significant deterioration to the valley support beams and some truss bearings. In isolated areas local failure had obviously occurred and temporary propping had been positioned. In other areas additional strengthening had been provided to beams and trusses.

Part C exhibits many of the defects noted in B although the level of maintenance may be somewhat improved. Significant water penetration still prevailed however with resulting timber decay. In addition to high level water penetration significant low level damp was also noted. Very severe out of plumb was noted to the west upper gables where a timber runway structure was attached.

Much of the structure of Part A was covered due to it's fitting out as either offices or a canteen. The open areas however were considered to be similar to parts B and C in terms of water penetration and resulting timber decay. In the finished areas significant low level damp was apparent.

Generally Part D was similar to C however no significant out of plumb was noted.

The contemporary structures Parts E and F were in a significantly better structural condition although some isolated areas of cracking was noted in E part around SE corner.

Conclusions

The contemporary structures E and F are in a substantially adequate structural condition although these are essentially basic industrial buildings with floor slab arrangements highly customized for their current usage.

The older construction suffers from:

1. Water ingress at roof level with resulting timber decay
2. Substantial lean and twist of both external and internal walls
3. Damp penetration at low level
4. Isolated areas of local cracking to walls

Item 1 of the above represents the most significant problem. There has been an obvious lack of adequate maintenance over a prolonged period of time and many key roof elements have been compromised. One trial high level investigation of an area appearing 'relatively solid' from ground level revealed considerable rot. It must be assumed that in addition to the obvious areas that there are many other areas significantly affected. In our opinion the roof may become structurally unstable in the short to medium term particularly given its form where it is susceptible to exceptional snow fall loading on internal valleys.

Item 2 also represents a significant problem given that extensive roof repairs and probably replacement are required. The displaced form appears to be of some age and the buildings are probably in equilibrium should they remain undisturbed. As noted above this is not an option. It is likely then that repairs would trigger instability of the walls with new load paths and probable loading eccentricities. These deformations would also prove a significant problem for future development of the existing structure where an upper floor is likely to be required. Although added stiffening and tying would probably be achieved, providing adequate calculation to prove the existing structure in its deformed condition might prove impossible.

Items 3 and 4 would require significant remedial works but are in our opinion feasible to rectify.

Irrespective of particular defects the form of the old construction would make it difficult to develop. As noted above an upper floor is a likely requirement where none presently exists. Additional significant loading would definitely be applied to the building. Some walls areas might not be adequate and it is unlikely that the foundation construction would have sufficient additional capacity.



Office and Part A / C / D and E



Part B Front Elevation



Part B Front showing area of Demolition



Part F View



Part B Rear View



Typical Internal Part B



Typical Internal Part B - With roof prop



Open Internal Area Part A



Front Extension Part C



Rear View of Part A and C



Further Rear View of Part A and C



Rear View of Parts D and E



Damage to Front Part B Extension



Internal with no support to timber beam



Typical Crack Damage to Part B



Typical low level damp Part A



Rear of Part C Showing 'Lean In' of head to wall



Rear of Part C Timber Runway Structure showing lean in support columns



Damp to Office areas



Internal Part C



Internal Part E



Typical Roof Tiling / Internal Gutter



Missing Ridge Part B



Deformed Roof & Damaged Tiling - Original Finish Part B



Replaced Internal Gutter with staining to timber support beam - Part B



Out of Plumb wall / pier - Part B



Water Penetration evidence at truss support / gutter - Part B



Water Penetration evidence at truss support / gutter - Part B



Typical Roof covering failure - Part B



Trial detail examination of gutter support beam Part b showing extensive decay



Failed truss support due to decay with steel prop – Part B



Out of plumb internal pier - Part B



Rear Elevation Part B showing relative displacement at construction joint with Left Hand Side 'leaning in' at Head