



# 4 MERIDIAN STREET, MONTROSE

Job No. 203966

**EXISTING BUILDING CONDITION REPORT**  
Interpretive report and recommendations from site observations.

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## **INTRODUCTION**

### **Project Brief**

At the request of Rix Shipping (Scotland) Ltd., Griffen Design Ltd. visited the property at 4 Meridian Street to assess the condition of the existing building.

### **Building Location & Overview**

The building is located at the end of Meridian Street, Montrose. This is a public road despite restricted access caused by the gate. The operational buildings within the vicinity dwarf the old building.

The building is 60.0m x 10.3m and 6.3m to eaves. The walls are dressed stone externally with loose rubble filling. Originally there was an internal floor at 3.0m, the joist ends and wallplate are still evident in the wall. The roof is slate finish on timber rafters and purlins supported on raised tie timber trusses and hipped on the north east elevation. The floor is a mix of oversite concrete and tarmac, both of varying condition and thickness.

### **History**

The building was built in 1905 as the Brechin Agricultural Trading Building, there is a date stone on the south west elevation. The building was originally used as a shipping store and loading building. The wet dock was off the south west of the building. The ships loaded via a line from the upper floor openings direct onto the ships deck. As technology progressed the building became more obsolete becoming a bulk fertilizer store in the late 1970's until 2015 when it was taken over by the current owner. In the early 1980's the wet dock was filled in rendering the building a store.

The change of use is evident in the buildings façade. The original openings are blocked up, large new openings in the south west and south east elevations with new access doors. Internally, the intermediate floor has been removed for increased storage space. To form the fertilizer store a series of steel columns were inserted adjacent to the external wall inner face, timber boards placed between the steel columns forming the retaining wall. There are only a few steel columns remaining, primarily to the northern end of the building.

## **SITE OBSERVATIONS**

Due to storage items a number of areas of the building were not accessible, namely the north east and south west elevations, and internally the northern end of the building were all inaccessible or closely observable.

### **North East Elevation**

The north east elevation is on Meridian Street. There are a number of alterations evident on this elevation, the large openings at the northern end on the ground floor are not original, reduced in size and finally blocked up. The upper floor openings are all blocked up, as are a number of the ground floor openings. A new personnel door is located midway along the elevation.

### **External**

The stonework generally is in poor condition. The mortar has been repointed and there are several large damp patches particularly at the southern end. A distinct bow in the wall is observed particularly in the central section of the wall.

### **Internal**

The wall is in very poor condition. The mortar is very friable, this is a combination of poor materials, poor maintenance and contact with the fertilizer. As a result there are numerous pockets where stones have been dislodged or missing.

At the wallhead there is a horizontal shift in the masonry. The top course is fixed to the rafters and remains in its original position. The stone below has moved outwards by 150mm to 200mm. This is due to the fertilizer storage, either retention or the push into position.

At almost every main girder support there are vertical and/or diagonal cracks. Again, this is due to a combination of poor materials, poor workmanship and fertiliser storage.

### **South West Elevation**

#### **External**

The stonework is difficult to observe on this elevation due to the material storage for the dockyard. From the small section that was observed the external face was in reasonable condition. A large new sliding door is located at approximately mid length. This opening is full height with new steel UB sections as a lintel.

#### **Internal**

The internal condition is very similar to the north east elevation. The mortar is very friable and there are numerous pockets of dislodged and missing stone. The wall is leaning or bowing. The wallhead is offset from the stone below by similar distances. There are cracks at almost every truss end.

### **South West Elevation**

#### **External**

This elevation is a full gabled the coping stones are weathered. There is a new large full width opening forming a sliding door. There is evidence of the mortar being repointed and some cracking.

#### **Internal**

There is a large vertical crack at each side of the new opening emanating from the lintel support and projecting up towards the roof. Evidence of repair and repointing throughout this elevation.

### **North East Elevation**

The roof is hipped at this end and the eaves level is consistent with the side elevations. This elevation has limited access from both external and internal.

### **External**

The masonry looks in reasonable condition. This is perhaps the most sheltered elevation and most difficult to access from plant and machinery. There are several vertical cracks from the eaves downwards. The wall has stepped out gutter inasmuch that the wall is approx. half the gutter width off plumb. The gable appears to be leaning at eaves level.

### **Internal**

The cracks viewed externally are also observed internally. The general condition appears to be similar to the side elevations, although this was observed from a distance.

### **Roof**

The roof appears in reasonable condition. The ridge remains reasonably level. There are some missing or dislodged slates. The sarking is discoloured which is normally associated with rot but could also be a result of the fertilizer. The rafters, purlins and trusses all appear sound but this is a visual observation from ground level.

## **DISCUSSION**

### **Building Use**

As discussed the previous uses of the building has changed numerous times over the life of the building. This has led to several changes in the appearance of the building, window and door openings being blocked up and new ones opened.

The use as a fertilizer store has had a detrimental effect on the building. In order to be used as a fertilizer store the intermediate floor was removed and steel columns were inserted adjacent to the external wall with timber boards between.

The fertilizer was stored in heaps by pushing the fertilizer using a type of bulldozer. Over time the fertilizer packed between the timber boards and external stone walls, either by the heap being pushed higher than the boards or being pressed between the boards. The walls then act partially as retaining walls supporting the at rest fertilizer pressure or the push pressure of the bulldozer. Either process has led to the bowing or leaning of the external wall.

The removal of the intermediate floor will have weakened the building as the lateral tie is removed. In combination with a change in the working pressures on the building has led to the leaning and bowing of the walls, particularly the elevations as they are long without lateral restraint.

The fertilizer also appears to have reacted or eroded the mortar between the stone, leaving the mortar very friable and very damp. The dampness is very evident on the most sheltered north east elevation where even after several years after disuse.

The previous uses and changes have weakened the building.

## **Building Condition**

The building is generally in poor condition and in need of repair and maintenance. The north west elevation is particularly poor exhibiting a severe lean worsening towards the mid length of the building. The north east gable also has a severe lean observed by the wall relative to the gutter. Internally, the building is in very poor condition with very weak, friable mortar, loose and missing stones and numerous cracks.

The ground floor needs to be removed and replaced in its entirety to produce a floor suitable for storage.

Only minor repairs are need to the roof. There are several small holes needing repaired with the eaves and guttering needing particular attention.

## **BUILDING RECOMMENDATIONS**

### **Conclusions**

The building is no longer fit for the purpose it was built for, hence the changes in use and appearance. This is also evident in the size of the adjacent buildings which are much larger. Changes in technology, modern plant and machinery have led to better storage and loading techniques.

The owner will be limited in the future use of the building because of its size and condition. We would envisage that a relatively minor accident with a modern machine would lead to major impact on the building. A great risk to the public if this was to the north east elevation on Meridian Street.

To repair the building would be exceptionally difficult given the major defect is the wall lean to the side elevations and weak mortar throughout the building. The wall would need to be taken down and reconstructed to correct the lean or a repair mortar injected into the cavities.

Finally, our recommendation is to demolish the building. There is little structural capacity remaining for change of use. The potential for accidental damage is high and the consequences disproportionate to the accident. And the cost of repair high compared with the gain in repair.

This report has been prepared based on the observations from our site visit and visual inspection.

Yours faithfully,



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## **Appendix A – Photographs**



**Figure 1: South West Gable Elevation**



**Figure 2: North East Gable & North West Elevation (Meridian Street)**



**Figure 3: Part South East Elevation**



**Figure 4: Part South East Elevation**





**Figure 5: North West Elevation – Wall Lean**



**Figure 6: North West Elevation – Wall Lean**



**Figure 7: North West Elevation – Damp Patch, Weathered Stone & Eroded Friable Mortar**



**Figure 8: North West Elevation – Altered Openings, Damp Pathces & Eroded Stone and Mortar**



**Figure 9: North East Elevation – Damp Patch, Weathered Stone & Cracking**



**Figure 10: North East Elevation – Typical Crack**



**Figure 11: North East Elevation – Damp Patch, Weathered Stone, Cracking & Gutter Position**



**Figure 12: North East Elevation – Damp Patch, Weathered Stone, Cracking & Gutter Position**



**Figure 13: North East Elevation – Wall off Plumb (Left Hand Corner)**



**Figure 14: Internal South West Elevation –Weathered Stone & Cracking, Truss Discolouring**



**Figure 15: Internal South West Elevation –New Lintel with Vertical Crack**



**Figure 16: Internal North East Elevation –Wall Lean, Weathered Stone, Patches & Cracking**



**Figure 17: Internal South West Elevation –Wall Leam, Weathered Stone, Patches & Cracking**



**Figure 18: Internal North East Elevation –Wall Leam, Wall Displacement, Patches & Cracking**



**Figure 19: Internal North East Elevation –Wall Leam, Wall Displacement, Patches & Cracking**



**Figure 20: Internal North East Elevation –Wall Leam, Wall Displacement, Patches & Cracking**





**Figure 21: Internal North East Elevation –Intermediate Floor, Patches & Cracking**



**Figure 22: Internal North East Elevation –Intermediate Floor, Patches & Cracking**



**Figure 23: Internal North East Elevation –Diagonal Crack**



**Figure 24: Damaged Stonework**



**Figure 25: Damaged Stonework**



**Figure 26: Damaged Stonework**



**Figure 27: Damaged Stonework**



**Figure 28: Damaged Stonework**



**Figure 29: Damaged Stonework**