Glasgow City Council

Development & Regeneration Services
Project Management & Design
229 George Street
Glasgow G1 1QU
Phone: 0141 287 8855
Fax: 0141 287 8444

Civil and Structural Engineering Practice

Project: **Inspection Of Sir John Maxwell Building, Pollokshaws**

Project No. **DRS0302**

Date: **5 November 2013**

Report By: **Scott Valentine**

STRUCTURAL REPORT

1. Introduction

Along with DRS Housing & Regeneration surveyors, an inspection of the above property was carried out on 24th September 2013.

The purpose of the survey was to examine the building condition. Structural input was to provide preliminary comments on significant structural defects.

The inspection covered the external elevations and the interior of the building, and was carried out from outside ground level and floor levels as appropriate.

All observations were visual and non-disruptive in nature.

2. Description Of Property

The property is a three storey building, built in 1907, and served as a primary school until it's closure in 2011. It has since remained empty and boarded up.

The elevations are a classic example of Victorian schools constructed at this time.

Externally the walls are of red ashlar sandstone, generally laid in parallel courses but uncoursed in other areas. The outer walls will be of solid construction with no cavity.

Internally, the load bearing walls will likely be of brickwork although it is possible that there will be local walls of stone.

The ground floor slab is of concrete and is generally constructed off the solid.

At the upper levels the floor structure is of two types.
Classroom floors tend to be of timber floor joists spanning between steel beams, while the upper hall, landings and cloakrooms are of filler joist construction.

The first floor cantilevered, balcony that runs around the perimeter over the lower hall is also likely to be of filler joist construction.

The roof structure is constructed from traditional timber trusses in a multi-pitched profile comprised of local dual pitch areas, some of which have hipped ends. Rooflights exist over the upper hall and the stairwells.

It should be noted that much of the above information has been lifted from archive drawings and therefore no guarantee can be made of its accuracy.

2. Defects To External Elevations

The external elevations are of sandstone and the stonework is generally of good quality and shows little in the way or erosion. Some areas show previously re-pointing of mortar joints.

External cracking was widely observed, especially to the SW, SE and NE elevations.

Most cracking exists around window and door openings including many shear cracks to the stone lintels.

These defects are not of immediate structural concern at this time, although failure to address them will result in water ingress and possible further deterioration. In the case of the cracked lintels especially, further deterioration will ultimately affect the stability of the window openings.

Permanent solutions for repair would take the form of cutting out replacing cracked stones. Likewise all cracked lintels should be replaced.

Over the northeast entrance doorway, a severe crack was noted through the supporting stones to the stone arched roof. This has resulted in noticeable deflection. We would recommend that acrow props be installed to the supporting stone elements to prevent any further movement. This would act as a temporary solution until full remedial repairs can be carried out.

3. Internal Defects

Internally, all areas of the property have been badly affected by water penetration due to the failure of the roof.

Pigeons have also accessed the building resulting in all surfaces being badly covered in pigeon guano.

The above restricted the ability to carry out a proper inspection. This especially as it was my opinion that accessing the second floor was too dangerous due to the possibility of rot having severely affected the second floor and roof.

Added to this, the inspection was non-destructive in nature and therefore the internal survey was far from conclusive.

It can be assumed that many structural timbers are badly affected by rot, especially within the upper part of the building. We would recommend that a full rot survey be undertaken to establish the extent of rot infestation.

Corrosion of steel members may also be a problem, although this cannot be investigated without carrying out intrusive surveys.

4. Roof Structure

No inspection of the roof structure was carried out.

However, it can be assumed that the roof has sustained much damage and that extensive rot will be present.

A full rot survey requires to be carried out to confirm this.

5. Overall Stability

All major walls, both internal and external, are restrained at floor level and eaves by the floor plates and roof structure.

The effects of major rot infestation of the floor joists and roof timbers may well affect the stability of the building structure in that the walls could possibly become unrestrained. This will increase their effective height, thus the walls will become more slender and less stable. In the event that this is the case, a system of temporary support/shoring of the walls may be required to make safe the property. Temporary support of the floors and roof may also be required.

Elements that are seriously affected by rot and built into walls (e.g. wallplates, safe lintels, joist ends) have the potential to crush under load. This can cause defects to occur to the masonry and at worse destabilise the walls.

6. Conclusion

Externally the outer walls are considered generally sound in the short term, although require remedial works to areas of cracking. The previous mentioned defect at the NE elevation should be the subject of temporary works in order to prevent against any further movement.

Internally the property has suffered from sever water penetration and therefore much rot is likely to be present. A full rot survey is required to discover the extent of the rot. This will assist with preparing proposals for repair and/or retention of the structure.

Note: The Rot Specialist should provide a method statement for carrying out the works whilst accessing the building in a safe manner.