

OFFICIAL

**Glasgow City Council
Neighbourhoods, Regeneration and Sustainability
Building Standards & Public Safety**

File Note

Inspection and Structural assessment
Of the reported dangerous building at
35 Lynedoch Street, the former Trinity College

Incident Report Ref: IR/ 22 /00017

February 2022

OFFICIAL

OFFICIAL

Introduction:

The building at 35 Lynedoch Street is the 'category A' listed former Trinity College dating from around 1858. Trinity College is a landmark building in the Park Circus area in the west end of the city of Glasgow. The building was converted to residential use around 1986. A fuller description of the Architecture and history of the building can be found elsewhere.

A contract commenced in January 2022 to undertake essential major repair and strengthening works to the west tower of the building. The principal parties associated with the contract being the Owners, JCJ Group [Contractor], Graham and Sibbald [Project Manager] and Will Rudd Davidson [Consulting engineers].

On Saturday 29th January 2022 Building Standards received a call from JCJ Group who reported their concern regarding the safety and stability of the west tower. JCJ informed that tilt monitors in the tower had alarmed in the early hours of the morning during a period of sustained high winds and had eventually went off-line. They were in the process of evacuating the Trinity building and indicated there may be a wider public safety issue beyond the building itself. Consequently, staff from Building Standards attended to inspect and assess the building.

Context:

This file note should be part of the Emergency Incident Report record, Ref. IR/22/00017 and. This note records the observations made and any actions taken by Building Standards in exercising its statutory function with regard to section 29 of The Building [Scotland] Act 2003.

Inspection:

An inspection of the building was made around mid-day by staff from GCC Building Standards accompanied by the contractor and the engineer. The building was inspected both internally and externally from ground level only as permitted by access and safety concerns.

Observations:

General

The building dates from the late 19th century and is around 164 years old. As noted the building is 'category A' listed and it has an imposing architectural style that includes three towers, two to the north and one to the west elevations. Concern had been raised regarding the condition of the western tower. The west tower stands over 50m high from entrance level and is around 7.5m square sided over most of its height. The tower is

OFFICIAL

OFFICIAL

constructed in mass masonry. The masonry walls are constructed, from inside to outside, with an inner 'leaf' of random rubble stone masonry up to tower level 5 then changing to coursed squared stone to top, a rubble fill core and externally finished with a polished ashlar sandstone façade. The tower is integral with the surrounding mainly two storey building up to roof level at between 12 to 15m above entrance level.

Specific Inspection Observations

[Refer to photo images in Appendix 1]

The contractor, JCJ, directed the inspection to the main area of concern at the lower south facing elevation wall of the tower [overlooking Woodside Terrace]. The tower walls were readily accessed and exposed from tower level 1 [c 12m elevation] upwards. The south wall of the tower was accessible from both sides from tower levels 1 to 3 and on inspection there was obvious clear signs of severe significant structural movement and distress in the masonry wall.

Viewed from the south face, between tower levels 1 and 3, the south wall of the tower had fractured in several places and sections of the masonry had displaced [southward] out of the wall to a significant extent. The displaced masonry appears to have separated from the core of the wall. At the highest level visible [looking into the roof space] the wall had displaced to such an extent that it was bearing onto the adjacent timber roof ties which were significantly bowed and appeared to be providing essential restraint to retain the wall in position. It was noticeable that the fractured traversed through the stone blocks as well as the mortar joints. There was a gap at the corner between the south wall and the flanking west wall and it was not clear if the walls had at any time been connected or if the connection had been broken.

Viewed from the north face, between tower levels 2 and 3, the south wall of the tower had fractured in several places and sections of the masonry had displaced [northward] out of the wall to a significant extent. The structural damage evident was similar to that showing on the south face but movement appeared to be in the opposite direction. The fracturing in the wall continued to the corner junction with west wall of the tower and around into the west facing wall itself.

Continuing the inspection upwards to tower level 3, via the internal stair, it was observed that there were significant structural cracks in all of the four tower walls there. The cracking was most evident in the south wall where there are full height vertical cracks in each of the two wall panels formed either side of and between the central window feature and the return corners to the east and west walls. Within the western length of the south wall there is an open void that appears to be part of the original construction [possible flue or vent]. The presence of the void is clearly to the detriment of the wall construction. The voussoir stones in the arch over the window in the south wall have noticeably

OFFICIAL

OFFICIAL

dropped in both the inner and outer leafs of the wall. The latter defect repeats to a lesser extent on each of the arched windows to the west, north and east walls.

At tower level 3 there are external feature stonework balconies projecting on corbels to north, west and south elevations. The balconies are accessible from tower level 3. The balcony projecting to the south has 'dropped' causing significant damage to the parapet and flagstones. On the south wall external face there is a wide fracture through the wall approximately at the mid length running vertically from the underside of the balcony downwards through the roof line of the adjacent two storey wing. The defects and movement in the balcony are clearly visible from ground level.

In the west wall, at tower level 3 and close to the corner with the north wall, there is a significant fracture through the wall to the extent that daylight is visible. The latter fracture extends upwards beyond tower level 4 and downwards to tower level 1.

Continuing up to tower level 4 there is moderate to significant cracking in the walls on all four elevations, but it is more prevalent in the south and west walls. On all walls the cracks extend full height from tower levels 4 to 5 and traverse above and below the three windows [on each wall].

On tower level 5 the internal masonry construction changes from random rubble to a more coursed and squared form. There are three tall louvered openings on each of the four walls. Slight cracking is evident on all four walls generally emanating from the corners of the wall penetrations. There is noticeable erosion of the stone at this level.

From tower level 6 upwards the condition of the stonework is generally good. There is little evidence of cracking. There is some signs of dampness and severe erosion in the stonework. Between levels 6 and 7 the stonework tapers inwards forming a mass masonry collar just below the accessible viewing platform/ balcony at tower level 7. The top most belfry or lantern construction is in relatively good condition. The cast iron balustrade appears to be in good condition.

As described, the masonry in the upper levels of the tower is generally good but from below level 6 the condition deteriorates becoming increasingly poor from level 5 down to level 1. There was no access available to view the structure below tower level 1. In addition to the most significant defects noted above there are many lesser defects visible. There are many cracks throughout ranging from slight to severe on all of the tower walls often emanating above and or below window penetrations. There is widespread and significant erosion of the stonework where, at some locations, the stone is literally disintegrating.

There is clear evidence of past attempts to repair cracks, replace lintels and replace rot affected timbers. None of the attempted masonry repairs appears to have been effective.

OFFICIAL

OFFICIAL

Assessment:

In the preceding section the most obvious and significant structural defects observed to be present in the building have been described. Generally the masonry forming the tower walls appears to be in a very poor condition, particularly evident from tower levels 1 to 5.

Between levels 1 to 3 in the south facing wall has the most significant defects. In the south facing wall of the tower and returning round to the west facing wall there are such significant fractures and displacements that indicate that the wall cannot be considered to be functioning as a reliable load bearing element of structure. That is, the wall cannot be considered to be structurally competent. The wall could best be described as being in a state of collapse.

Externally the defects evident in the south facing balcony at tower level 3 and the severe fracture in the ashlar just below the balcony and the defects in the arch over the window at that level are structurally significant. These defects appear to reflect the damage evident internally in the south facing wall as described above. Collapse of the balcony and surrounding attached stonework could initiate a more extensive collapse in the tower.

The west facing wall of the tower has a very severe and structurally significant fracture through the depth of the wall extending from tower level 1 to 4. The fracture in the west facing wall creates an effective discontinuity with the return wall to the north facing wall. At lower levels 1 to 2 there is cracking along the length of the wall.

The damage observed in the stone masonry has been caused by excessive straining within the structure. It is likely that the straining has been progressive for many years. The cause of the straining is not known but it is most likely to be caused by a number of factors [there are signs of settlement at the south west corner].

The defects observed in the tower walls could adversely affect the stability of the structure. Partial collapse of the defective south facing wall could initiate a wider general collapse of the supported structure above and the general condition of the masonry and presence of so many significant defects in close proximity heightens that concern.

Given the nature of the building construction and the structural defects evident, the risk of a sudden catastrophic collapse should be considered to be high. The building should be considered to be unsafe.

The consequence of a sudden uncontrolled collapse is not acceptable so it was concluded that there was in imminent danger that could not be adequately addressed in the short term.

OFFICIAL

Recommendations and Actions Taken:


Based on the site inspection observations and assessment of the structure and its condition it was clear, following consultation with the contractor JCJ, that effective immediate action could not be taken to try to mitigate the identified dangers.

Given the nature of the defects there was an obvious danger of destabilising the building during the execution of such stabilization works. JCJ advised that an effective back-propping and or bracing to the defective structure would need to be developed in conjunction with their in-house engineer and the project engineer Will Rudd Davidson.

Consequently, it was recommended that immediate action should be taken to exclude access to the properties in 35 Lynedoch Street and the immediate surrounding area until the building was made safe. None of the representatives from JCJ, Will Rudd Davidson and Graham and Sibbald voiced any disagreement with that decision.

At that time the on-call contractor was JCJ who, under instruction, undertook the necessary measures to secure the site and exclude the public from the building and surrounding area. Police Scotland and SFRS were on site at this time. The residents at 35 Lynedoch Street and the immediate identified surrounding area at risk were notified of the danger and were requested to evacuate the building.

The evacuation was completed with the assistance of SFRS, JCJ, Police Scotland and the cooperation of the residents.


Structural Engineer
GCC Building Standards
Feb 2022

OFFICIAL

Appendix 1

Photographic Record.

OFFICIAL

OFFICIAL

P1

P2

P3

OFFICIAL

OFFICIAL

P4

P5

P6

P7

P8

OFFICIAL

OFFICIAL

P9

P10

P11

OFFICIAL

OFFICIAL

P12

P13

P14

OFFICIAL

OFFICIAL

P15

OFFICIAL