

Our Ref: KP/FLM/14989

7th September 2018

FAO Mark Guild

Guild Homes (Tayside) Ltd
Chapelark House
17 Academy Street
Forfar
DD8 2HA

Structures
Infrastructure
Flood Risk
Environmental
Hydrology
Transportation

Dear Sirs,

STRUCTURAL INSPECTION OF LOCHSIDE LEISURE CENTRE, FORFAR

We thank you for your recent request for a structural inspection of the property at the above noted address. Our inspection was carried out on 4th September 2018, was non-disruptive and consisted of internal and external viewing from ground level. The purpose of the site visit was to carry out a general condition survey of the property with particular reference to reported ongoing settlement.

Issues such as timber infestation, fungal decay and damp are out-with the scope of this report. We have not inspected parts of the structure which were covered, unexposed or inaccessible and we are therefore unable to report that such parts of the property are free from defect. Any dimensions noted are approximate.

Lochside Leisure Centre is located to the east of Forfar Loch, and consists of a series of single storey, two storey and double height spaces. The facility was historically a mixed-use leisure complex; however, it is understood that the facility closed in February 2017 and has been unused since. Drawings showing the existing building layout have been included within Appendix A and a selection of the survey photographs have been included in Appendix B.

External Inspection

The first stage of the inspection consisted of a visual inspection of the outside of the building from external ground level, refer to Figures 1 to 8. The external walls were finished in a brown roughcast render throughout the extents of the building. The exact make-up of the external walls could not be established but they had the appearance of being of brick cavity construction. The external wall panels enclosing the double height sports hall appear to be strengthened by piers, refer to Figures 6 and 7. Vertical movement joints were generally observed at regular centres around the perimeter of the building.

When inspected from ground level the external masonry wall panels appeared to be level, with no evidence of bulges or misalignment observed. The render appeared to be in a good condition throughout, with very little evidence of boss render, spalling or general degradation noted.

Cracking was noted on the external façade at the south west corner of the building, with two diagonal cracks propagating away from the sill of the first-floor fitness suite windows, refer to Figures 3 and 4. There was evidence that this cracking had been subject to remedial repairs. No movement joints were noted in this section of the building; therefore, the cracking could be attributed to thermal shrinkage of the masonry wall panels. Generally, no evidence of cracking or evidence of ongoing structural movement was noted elsewhere on the external walls.



Generally, the movement joints appeared to be a consistent width up the full height of the building. On the wall forming the east elevation of the Drama Studio the movement joints appeared to have opened at the wall head location, refer to Figure 8.

The roof consisted of a flat profile throughout and therefore an assessment of the roof structure could not be made from ground level. No access was available to the roof level at the time of the inspection therefore the condition of the roof fabric, rainwater goods and structural members could not be inspected during the site visit.

Entrance Area

The building was accessed from the front entrance on the east elevation into a two-storey area that contained the foyer, reception, café, toilets and storage space at ground floor level; and a gym, fitness suite and toilet facilities at first floor level. The internal walls in these areas were of masonry construction.

The walls were finished in either a plaster or a wet dash render system applied directly to the masonry walls. On inspection of the walls they appeared to be plumb with no bulging or lack of alignment observed. No evidence of significant cracking or structural defects had been transferred through to the finishes in these areas.

The floor did not feel level throughout, this was particularly evident at ground floor level in the café area where it sloped significantly towards the sports hall. It was noted that the floor in this area had a tile finish. No evidence of loose or boss tiles was noted, thus suggesting that the floor settlement was historic and had not been active since the floor finishes had been applied.

Drama Studio

The Drama Studio is a double height space located on the south elevation of the building. The walls in this area are generally finished internally with a plaster skin directly applied to the masonry wall. On inspection of the walls they appeared to be plumb with no bulging or lack of alignment observed. Hairline cracking was observed on the plaster finishes; however, this had the appearance of cosmetic shrinkage cracking as opposed to evidence of ongoing settlement or structural movement.

The exact nature of the roof structure could not be established as it was concealed by the ceiling finishes. The floor generally felt level and secure underfoot.

Sports Hall

The main sports hall area is a double height space located on the west elevation of the building. The walls were finished in exposed brickwork, refer to Figures 9 and 10, and appeared to span between steel columns / wind posts at regular centres. On inspection of the walls they appeared to be plumb with no bulging or lack of alignment observed. No evidence of cracking or spalling of the masonry units was noted in the main hall.

The exact nature of the roof structure could not be established as it was concealed by the ceiling finishes. Evidence of water ingress was noted towards the north west corner of the sports hall. The sprung timber floor system had warped in a number of locations; however, it is thought that this is symptomatic of a lack of building maintenance since the facility closed.

Towards the north end of the hall a single storey storage area had been constructed, refer to Figures 11 and 12. This consisted of flat timber roof joists which spanned between steel beams subsequently supported on the load bearing brickwork walls. Cracking was noted in this area of the building; however, it was not severe and was unlikely to have been caused by ground movement.

Squash Courts

Two squash courts are located on the east elevation of the building. The walls were finished internally with the plaster being applied directly to the masonry walls, refer to Figures 13 and 14. On inspection

of the walls they appeared to be plumb with no bulging or lack of alignment observed. Vertical hairline cracking was noted on the plaster finish, refer to Figure 14. This cracking had the appearance of being a product of thermal shrinkage, which is a common occurrence in spaces of this size and construction.

The roof structure consisted of flat timber roof joists which spanned between steel beams supported on the load bearing masonry walls. No defects associated with the roof structure was noted during the inspection. The floor was finished with a sprung timber sports floor system. The sprung timber floor system had warped in one of the squash courts; however, it is thought that this is symptomatic of a lack of building maintenance since the facility closed.

Changing Areas

The changing rooms were contained within the single storey area located towards the north west corner of the building. The walls in these areas were of masonry construction and finished in a wet dash render system in the corridor areas, and tiled in the changing room and toilet areas. On inspection of the walls they appeared to be plumb with no bulging or lack of alignment observed. Minor hairline cracking was observed in the corridor area, refer to Figure 15, however this had the appearance of cosmetic cracking induced by thermal shrinkage.

The floor did not feel level throughout, this was particularly evident in the corridor area where it sloped significantly towards the sports hall. This is shown on Figure 16 which illustrates that the doors have been altered to accommodate the drop in the floor level. It was noted that the floor in this area had a tile finish. No evidence of loose or boss tiles was noted thus suggesting that the floor settlement was historic and had not significantly moved since the floor finishes had been applied.

Weight Training Area and Boiler House

The weight training area is a single storey extension located to the north of the building. The walls were finished in exposed brickwork. On inspection of the walls they appeared to be plumb with no bulging or lack of alignment observed. No evidence of cracking or spalling of the masonry units was noted in the main hall.

The exact nature of the roof structure could not be established as it was concealed by the ceiling finishes. The floor felt level and secure during the inspection.

No access was available into the boiler house at the time of the inspection.

Discussion and Conclusions

There were very few structural defects observed externally during the inspection, and any cracking noted appeared to be caused by thermal shrinkage and not by progressive ground movement. The external walls appeared to be well detailed with vertical movement joints noted at regular centres. Internally, the masonry walls were exposed in a number of areas and no cracking or evidence of structural movement was noted. In the areas where the masonry was concealed by finishes, the finishes generally consisted of a brittle finish directly applied to the masonry. Any cracking observed internally generally appeared to be cosmetic and not symptomatic of ongoing structural movement. Due to the brittle nature of the finish it is thought that any movement of the structure would be clearly visible.

The ground floor appeared to be significantly sloping in areas, particularly in the areas adjacent to the sports hall. The floors appear to be sloping down towards the sports hall and squash courts suggesting that separate parts of the structure have settled at differing rates. In this area of the building it was noted that the floor was finished in tiles. In a tiled floor finish any recent ground movement is generally characterised by cracking and tiles becoming boss. No such defects were noted thus suggesting that the ground movement is historical and not progressive.

In conclusion, it would appear the building does show evidence of structural settlement; however, the defects noted are not symptomatic of ongoing or progressive structural movement. The nature of the

finishes in the building would clearly present evidence of ongoing ground movement issues, this evidence was not observed during the inspection.

We trust that this provides you with an understanding of the structural condition of the building at this time; however, if you have any queries please do not hesitate to contact our office.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Ken Pirie', written in a cursive style.

Ken Pirie
Director

Appendix A – Layout Drawings

- 74571219-01 – 03 – Existing Overall Site Plan
- 74571219-01 – 05 – Existing Leisure Centre Ground Floor Plan
- 74571219-01 – 06 – Existing Leisure Centre First Floor Plan and Section

Appendix B – Survey Photographs



Figure 1 – Front (East) Elevation of Lochside Leisure Centre



Figure 2 – East Elevation of Drama Studio at Lochside Leisure Centre



Figure 3 – South West Corner of Lochside Leisure Centre



Figure 4 – Diagonal Cracking from Sill on South West Elevation



Figure 5 – West Elevation of Café/Kitchen Area



Figure 6 – West Elevation of Sports Hall



Figure 7 – North and West Elevation of Sports Hall showing Single Storey Storage Area



Figure 8 – Opening of Movement Joint on East Elevation



Figure 9 – Double Storey Sports Hall



Figure 10 – Double Storey Sports Hall showing Water Ingress



Figure 11 – Internal Structural Arrangement of Sports Centre Store



Figure 12 – Cracking Propagating Away from Padstone in Sports Hall Store



Figure 13 – Typical Roof Structure Arrangement in Squash Court Area



Figure 14 – Vertical Cracking on Finishes in Squash Court Area



Figure 15 – Hairline Cracking on Finishes of Wall in Changing Room Corridor



Figure 16 – Evidence of Floor Movement in Changing Room Corridor Area