



REPORT

Structural Survey of the Officers Mess Building and
Water Tower at the Former Magee Barracks,
Hospital Street, Kildare Town, Co. Kildare.

May 2019

GARLAND
Concepts Realised

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Description of change	Originator	Rev	Approval	Date
Initial Release	CR	1st	CR	30.05.2019

1. INTRODUCTION

At the request of Ballymount Properties Ltd, GARLAND undertook a visual inspection of the existing Officers Mess building which is located within the former Magee Barracks. The most recent survey took place in November 2017 following on from inspections which were conducted in March 2016. The building is a two storey structure above ground, built from block and concrete material. It is proposed to demolish this building as part of the attached planning application. The building is reference throughout and can be identified by the red arrow In Figure 1 below.

We believe the building was constructed circa. 1900. The barracks has been closed in recent years (circa. 2003) and the building has fallen into disrepair.

This inspection does not give an assessment on asbestos but the building has existed through a time when the use of asbestos in building products was commonplace.



Figure 1: Site Location Map of the Officer's Mess

2. INSPECTION OF OFFICER'S MESS

The external façade of the building is constructed using a mixture of fair faced block and brick. The external skin of the building is showing signs of significant mortar loss, which will worsen and cause further deterioration with time. The brick sections of the façade are out of plane in some locations due to the loss of mortar. Mortar will continue to deteriorate due freeze thaw action.

All timber windows have significantly rotted and beyond reuse.

Lintels above windows in many locations are beyond repair and need to be replaced. There is currently propping to support some of these lintels.

The windows are broken allowing water ingress.

The structural timber visible throughout the ground floor level of the building has deteriorated and is beyond recovery. The upper internal floors were too dangerous to inspect but we expect the level of deterioration is similar to the ground floor levels.

The metal piping (soil vent pipe) fixed to the building has corroded and broken in some locations.



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5

3. INSPECTION OF OFFICER'S WATER TOWER STRUCTURE

The water tank structure is constructed of a concrete base which sits approximately 600mm of the surrounding ground level. Nine columns project from the foundation to support the water tanks which are clad in corrugated steel. The overall height of the structure is approximately 12.5m when measured from the existing ground level.

The water tower was found to be in extremely poor structural condition. There is significant corrosion of all structural members and cladding. The protective coating to the metal has failed allowing for corrosion, deep pitting and loss of cross section.

The diagonal bracing which provides stability to the structural frame has failed at most connections. The failures at bracing connections are significant and the bracing to the water tower can no longer be considered to be providing the structural function for which it was designed.

The cladding around the water tower has corroded significantly and panels have come loose. From aerial photographs, it appears that some roof panels have also come loose.



Photograph 6



Photograph 7



Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13

4. CONCLUSIONS

4.1. OFFICER'S MESS STRUCTURE

The building has deteriorated significantly and is showing signs of excess stress and local structural support failure. The design life of the roof, floor plates, stairs and lintels has been exceeded. The building would require significant structural improvement to the floor plates, stairs and roof. The timber windows structure is beyond reuse. The external façade has discoloured due to wear and salts in many locations. This façade would not be able to return to its original consistent colour. The building poses a health and safety risk to any persons in the vicinity of the building.

4.2. WATER TOWER STRUCTURE

Foundations: from visual inspection; the existing concrete foundations appear to be in reasonable condition.

Bracing members: The bracing members have failed in most locations. As the bracing members are thin in cross section, cleaning back the corrosion would significantly reduce the member's capacity and therefore they could not be re-proposed for the function they currently serve. New bracing would need to be provided.

Columns and beams: Corrosion testing would need to be conducted throughout to assess the loss in cross section due to corrosion. The beams and columns will require additional strengthening. It may be possible to strengthen the columns and beams by a weld build technique. Plating the beams and columns would increase the thickness of the members and make them look bulkier than they do presently.

Cladding: The cladding can only be viewed from the ground but it is evident that the corrugated cladding has already begun to significantly corrode. It is difficult to say how much of the original cladding could be reused, but considering the amount of pitting of the cladding panels closest to the ground; we estimate only very small sections cut from larger panels are fit for reuse. Examination of the aerial photos available it appears the roof cladding has already come loose.

The structure is at risk of collapse and if stabilisation works or repairs works are not being considered, an exclusion zone of approximately 20m in all directions should be placed around the water tower structure.

If repair works are being considered the following works will be required at a minimum:

- a) Remove the water tanks as they no longer serve a purpose.
- b) Provide temporary supports to allow for the removal of bracing members.
- c) Clean back all structural members and assess residual capacity of structure. It is likely that the structural members will require plating or replacement of members.
- d) The cladding around the water towers will need to be replaced. We estimate that only small amounts of material can be salvaged.

Signed by:



Cáthal Rigney
Registered Professional Consulting Engineer

Consulting Engineers

Project Management

Safety Management

International

www.garlandconsultancy.com

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