

Askeaton Pool Flood Protection

Engineering Planning Report

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1 Introduction

This report was prepared to accompany a planning application for the proposed flood protection works to the plant rooms of the existing Public Pool located in Askeaton, Co Limerick. The site location is shown in Figure 1-1 below.

The works are to be located at the existing Public Swimming Pool Building in Askeaton, located here.



Figure 1-1: Site Location of the Proposed Development

The site is essentially flat, bounded on the west by a rock cliff following the excavation of rock on the site for the original swimming pool at the site, and on the east by the River Deel.

The semi-basement plant rooms within the Askeaton swimming pool building have been subject to repeated flooding since the building opened in 2007. The flooding arises from the adjoining River Deel during extreme heavy rainfall events. The flooding risks damage to plant and leads to health risks to facility personnel from water in the plantrooms which is contaminated with sewage. Flooding also leads to downtime while the facility is restored to safe operating condition.

Limerick City and County Council wish to carry out flood protection works to prevent future flooding of the plantrooms in advance of future wider protection works recommendations of CFRAMS. The performance period for the works is until the future wider protection works recommendations of CFRAMS are in place. This timeframe is estimated to be approximately 10-20 years.

The purpose of the proposed changes is to prevent flooding in the 3 plant rooms (Plant and Filtration Room, Chemical Store, Chemical Dosing Room) and the equipment within. Some works are also proposed externally to similarly protect plant in the service yard from the effects of flooding.

1.1 Flooding

The floor level of the building generally is 4.1mOD, with the semi-basement plant rooms at 3.0mOD.

Since completion of the pool building in 2007, the site has flooded on several occasions including March 2008 (c. 3.28mOD), 2014, and again in Jan 2018 (3.45mOD).

Anecdotal evidence indicates extreme flooding in 1997 was the highest in living memory and is reported to have reached c 3.85mOD with large areas of the town flooded.

The current CFRAMS mapping for the area notes the 1:100yr fluvial flood level as 3.47mOD, and the 1:200yr coastal flood level as 4.11mOD.

1.2 Proposed Works

The proposed works are outlined in a series of drawings prepared by PUNCH Consulting Engineers and supplied as part of the planning documentation.

To address the flooding in the plantrooms, it is proposed to construct an impermeable concrete 'box' within each plantroom consisting of a new base slab, perimeter walls and suspended concrete floor. This will raise the new floor safely above flood levels and exclude contaminated river water from entering the plant rooms.

It is proposed to raise the floor of the main plantroom by 1.3m to a level of 4.3mOD. There is sufficient headroom available in the main plantroom to facilitate this. The smaller plantrooms, i.e. the Chemical Store and Chemical Dosing Room, have lower ceiling heights, currently c 3.3m. To maintain a minimum of 2.1m head height in these rooms, the floor can only be raised by 1.2m to 4.2mOD in these rooms.

The raised floors will be accessed via raised doors in the rear wall of the building, and by a new raised walkway which will run alongside the rear wall. The walkway will merge into existing ground levels at the north, with stairs at the south to provide access from the service yard. The existing service yard security gate will be redesigned to accommodate the new walkway.

In the service yard, the wall of the bund around the oil tank will be raised to prevent ingress of water into the oil bund during a flood event, and air-to-water heat exchangers and their enclosures currently located in the yard will also be raised on a new frame to prevent damage by water during a flood event.

1.3 Stormwater Drainage

No changes to the existing stormwater drainage design are proposed.

The existing non-return valve at the stormwater discharge point to the River Deel will be replaced to ensure its functionality is maintained in accordance with the original design.

1.4 Foul Water Drainage Design

No changes to the existing foul drainage design are proposed.

1.5 Watermain Design

No changes to the existing watermain design are proposed

1.6 Roads and Access

No changes to the existing roads and access are proposed.