

Flood Risk Assessment for proposed new prefabricated steel buildings

At

Grainthorpe Playing Field

Main Road

Grainthorpe

Nr Louth

Lincolnshire

LN11 7HX

For

Grainthorpe & Conisholme Village Association

(Registered Charity No.: 521929)

In

Flood Zone 3

Environmental Agency Flood Risk Assessment Classification: "Moderate"

Introduction

Grainthorpe Playing Field has existed since 1969 when agricultural land was gifted to the village to provide sports and recreational facilities to the populations of Grainthorpe and Conisholme. The field is owned by trustees, with all ownership rights being given to a registered charity which was originally called 'Grainthorpe Playing Field' and was changed to 'Grainthorpe & Conisholme Village Association' in 2009 when it merged with Grainthorpe Village Hall.

Upon consultation of the Environment Agency's Flood Risk assessment map it can be seen that the site does lie in a flood zone 3 area which is labelled as at risk of flooding. However the area is not shown as an area which is highlighted as being "extent of extreme flood". Upon further investigation of the flood map, the site is described as "moderate" risk of flooding from rivers and seas.

Flood Sources

Louth Canal: The nearest possible source of flooding to the proposed site is the Louth Canal which passes through the parish of Grainthorpe approximately 2000 metres to the South West of the site. This canal is protected by large banks on either side and monitored by the Environment Agency who have the power to control water levels with the use of pumps located at Covenham reservoir and Thoresby Bridge. The likelihood of these banks breaching or the water level overflowing them is extremely low and even if this were to happen it is unlikely that the flood water would reach the proposed site.

Covenham Reservoir – The 2nd possible source of flooding for the proposed site is the 216 acre reservoir which is located 3000 metres to the West of the site. The reservoir, which was built in the 1960's, provides water storage to serve the town of Grimsby. Since construction the water level in the reservoir has been managed carefully by Anglian Water and shows very little sign of ever becoming a flood risk to the surrounding area either through a breach in the reservoir banks or by overflowing. If the reservoir did ever flood the local area there are hundreds of acres of arable land and buildings which would be flooded before water reached the site. This is particularly the case due to the location of the Louth Canal and its banks between Covenham reservoir and the proposed site.

The North Sea: The North Sea is the final source of flooding which may threaten the proposed site. The area of sea water better known as the Humber Estuary is approximately 4900 metres to the east of the site at its nearest point. This is not thought to cause any significant threat to the site due to the distance and therefore the quantity of sea water which would be required to reach the site. This threat of flooding is also managed by the man-made sea defences consisting of a 4 metre high grass covered sea wall stretching along the coastline in question. This flood defence was recently strengthened by the Environment Agency by adding 0.5m to the top of the bank and deliberately flooding 300 acres of farmland. These steps were taken as part of the Environment Agency's plan to protect this area of coastline for at least the next 50 years.

Lindsey Marsh Drainage Board

The area surrounding the site hosts a number of large dykes to store water and move large volumes of water in times of high rainfall and flooding. These dykes are maintained and regularly inspected and cleared of reeds by the Lindsey Marsh Drainage Board.

Existing drainage system on the site

Grainthorpe Playing Field is surrounded by drainage ditches on all four sides. The field has a land drainage system which is well maintained and efficiently drains surface water.

Building Materials

All the proposed new buildings will have walls, floors and roofs made from 1.6mm thick steel plates which will provide strength and durability if the site were to ever flood.

The buildings will contain a minimum of fixtures and fittings, being sanitary and basic kitchen fittings. All electrics including lighting will be at least 1m off the ground.

The proposed buildings are manufactured in the same method and materials that shipping containers are made and they are often referred to as 'container buildings'. Like shipping containers, the buildings will be water tight.

Post Flooding

The design and structure are such that they are designed to keep the contents dry even in times of heavy flooding. In the unlikely event that water enters the building the flood water would be allowed to recede naturally. Once this had happened the building design would aid it to dry out very quickly. The design is such that this type of flooding should not compromise the structural integrity of the building.

Topography

The surrounding landscape is level in all directions other than the Louth Canal bank, Covenham Reservoir and the man-made sea defences. The foot of the Lincolnshire Wolds is located some 9 kilometres to the South West of the site.

Alternative Sites

There is no alternative site for these buildings, other than the playing field. The buildings are to enhance sports and recreational facilities that take place on the field. The positioning on the field of

the new buildings is adjacent to the car park which allows entry to disabled toilet facilities by disabled users. Any other positioning within the site would either increase difficulty of access by disabled users or reduce the amount of car parking spaces.

Conclusions

The decision to apply for the new buildings at Grainthorpe Playing Field has been an informed decision. It has considered flooding risks to the area from various sources, the infrastructure which is in place to minimise this risk, local knowledge of the area and any historic flooding nearby.

Consideration has been given to the type of building constructed to best withstand any possible flooding risk and to the procedures following any such disaster.

The impact of the proposed new buildings on flooding risk is neutral and the assessment of flood risk is low.