



Lee Fenton

Planning Services Ltd

## FLOOD RISK ASSESSMENT

THE OLD COAL YARD

HALL GATE LANE

PREESALL

LANCS

FY6 0PJ

REMOVAL OF DWELLING, NEW COMMERCIAL BUILDING, ENLARGEMENT OF CAR PARK & IMPROVED ACCESS TO HIGHWAY

## SCOPE OF THE ASSESSMENT

The National Planning Policy Framework (NPPF) sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. Supporting Planning Practice Guidance is also available.

The NPPF sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible, and stresses the importance of preventing increases in flood risk off site to the wider catchment area.

The NPPF also states that alternative sources of flooding, other than fluvial (river flooding), should also be considered when preparing a Flood Risk Assessment.

As set out in the NPPF, local planning authorities should only consider development in flood risk areas appropriate where informed by a site specific Flood Risk Assessment. This document will identify and assess the risk associated with all forms of flooding to and from the development. Where necessary it will demonstrate how these flood risks will be managed so that the development remains safe throughout its lifetime, taking climate change into account.

In investigating the flood risk relating to the site, the Environment Agency flood mapping has been reviewed and has confirmed that the site lies within Flood Zone 3. Flood Zone 3 is identified as land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. The flood zones categorisation refers to the probability of river and sea flooding, ignoring the presence of defences.

# STRATEGIC FLOOD RISK ASSESSMENT

The Strategic Flood Risk Assessment for Wyre Borough Council is dated April 2007 and was produced by Wyre Borough Council.

The SFRA states this area is very low lying and flat with the majority of the area in Flood Zone 3. The area is predominately agricultural in nature with sporadic larger villages.

The main risk of flooding within the area is from tidal sources, from a breach of the coastal or estuary defences. This would lead to significant areas being flooded. The area is also susceptible to flooding from fluvial sources due to the low gradients and difficulty in discharging into Morecambe Bay. This is compounded by rising beach levels at the discharge points. Similarly sewer flooding, groundwater and highway drainage systems can result in flooding problems as they are interconnected to the watercourses and suffer from poor hydraulics and overcapacity in the urban area.



## SOURCES OF FLOOD RISK

This section of the Flood Risk Assessment looks at the flood risk to the site before any mitigation measures are put into place and hence identifies where mitigation will be required.

This document will continue to explain the mitigation measures proposed and the residual risk following implementation of any proposed mitigation.

The SFRA states the main risk of flooding within the area is from tidal sources, from a breach of the coastal or estuary defences.

The site is identified on the Environment Agency's flood mapping as lying within Flood Zone 3 defended. The main risk of flooding is from tidal surges and the subsequent overtopping of the adjacent Grange Watercourse.

The area is protected by coastal defences that provide protection to the site. The walls and embankments provide protection from a 1 in 200 year event.

The site lies within an Environment Agency flood warning area.



Canals, reservoirs and other sources

There are no canals or reservoirs *local* to the area.

### Groundwater

Groundwater flooding tends to occur after much longer periods of sustained high rainfall. The areas that are at risk tend to be those low-lying areas where the water table is shallow. Flooding tends to occur in areas that are underlain by major aquifers, although groundwater flooding is also noted in localised floodplain sands and gravels. The main causes of groundwater flooding are:

- Natural groundwater rising due to tidal influence, or exceptionally wet periods leading to rapid recharge;
- Groundwater rebound due to cessation of abstraction and mine dewatering;
- Existence of confined aquifers and springs.

### Pluvial runoff

The Environment Agency Risk of Flooding from Surface Water map indicates the site is at a very low risk of surface water flooding i.e. this means that each year, this area has a chance of flooding of less than 1 in 1000 (0.1%); and a low to medium risk of surface water flooding confined to within the drainage ditch along the site's southern boundary.

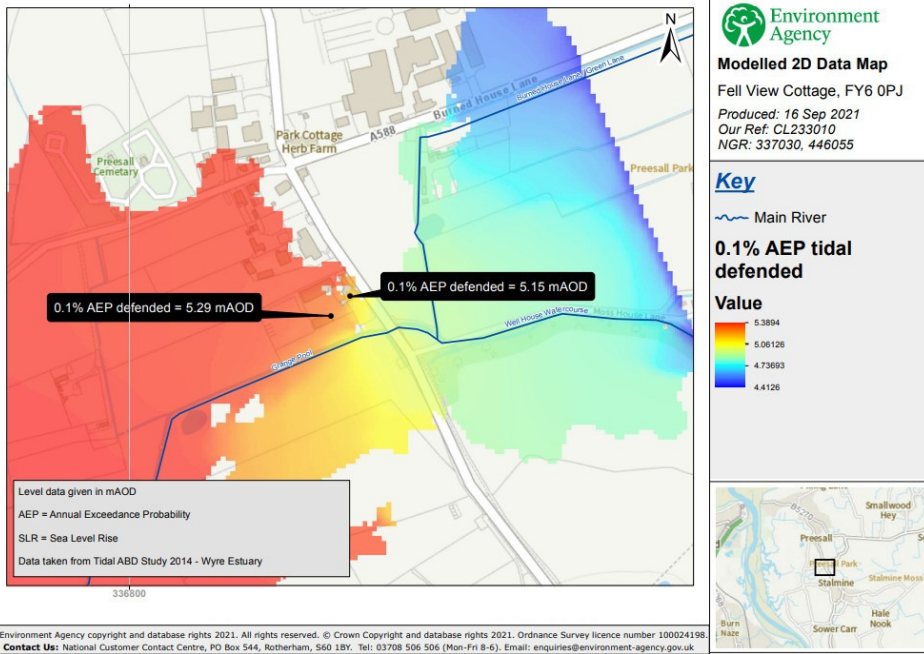
It should be noted that surface water flooding can be difficult to predict, much more so than river or sea flooding as it is hard to forecast exactly where or how much rain will fall in any storm.

### Development drainage

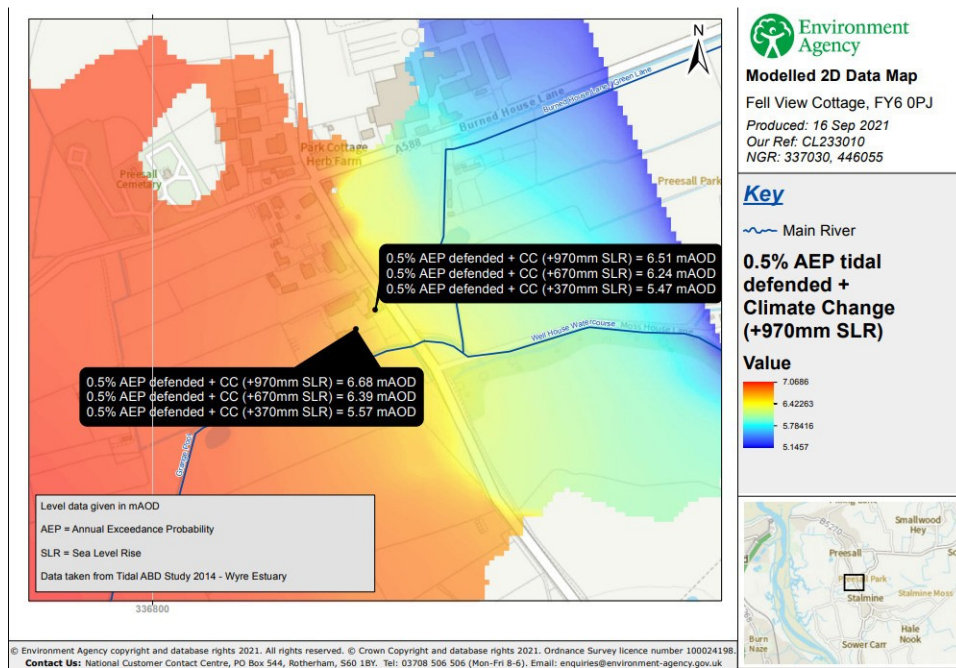
It is proposed to discharge all surface water from the new yard and hard standings to Grange Pool thus removing any surface water from the combined sewer. The run-off will be restricted, by means of a hydro-brake flow control device, to the current 1 in 1 year event i.e. 5 l/s, with attenuation storage provided upstream of this. It is noted that 5 l/s is the recommended run-off for greenfield developments.

Foul waste is not applicable.

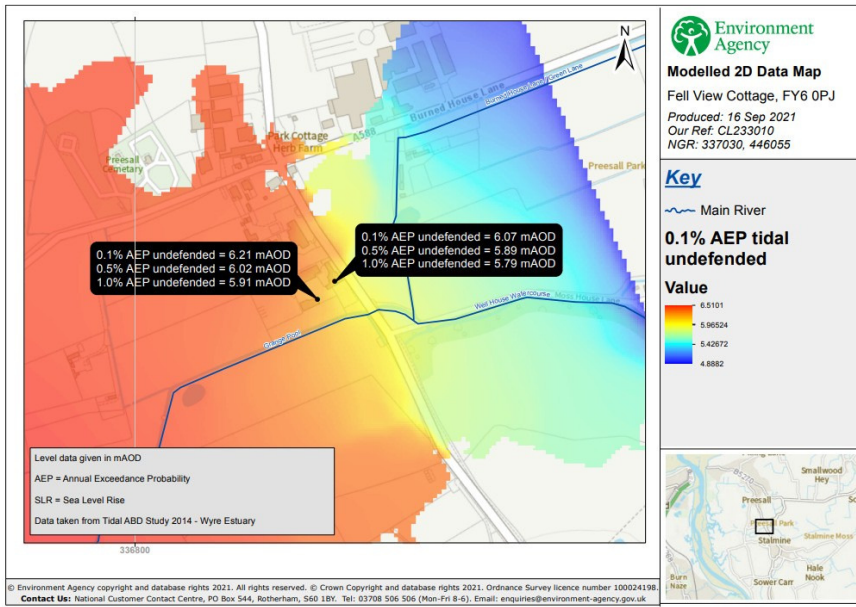
# ASSESSMENT OF PRODUCT 4 INFORMATION



The 0.1% AEP tidal defended scenario effects the site to a level of 5.15mAOd.

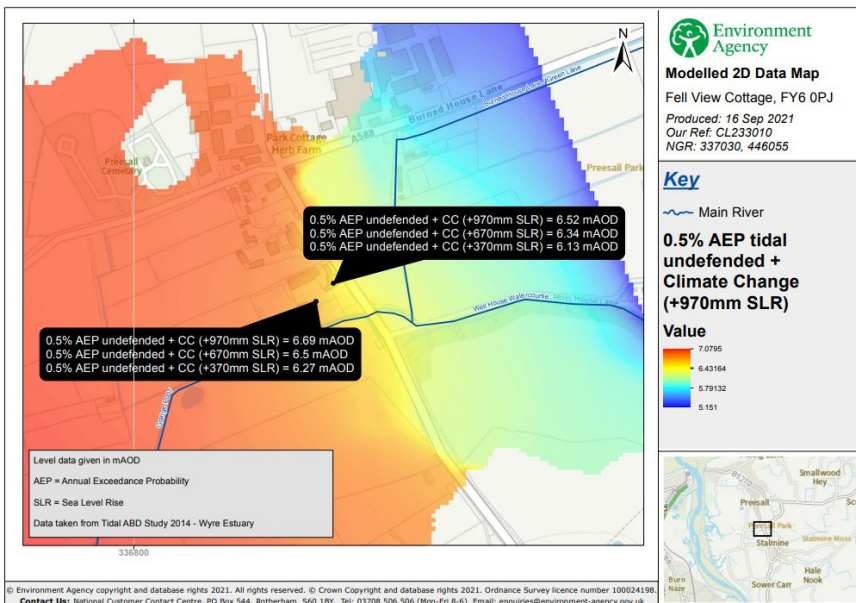


The 0.5% AEP tidal defended + climate change (+970mm SLR) scenario effects the site to a level of 6.51mAOd.



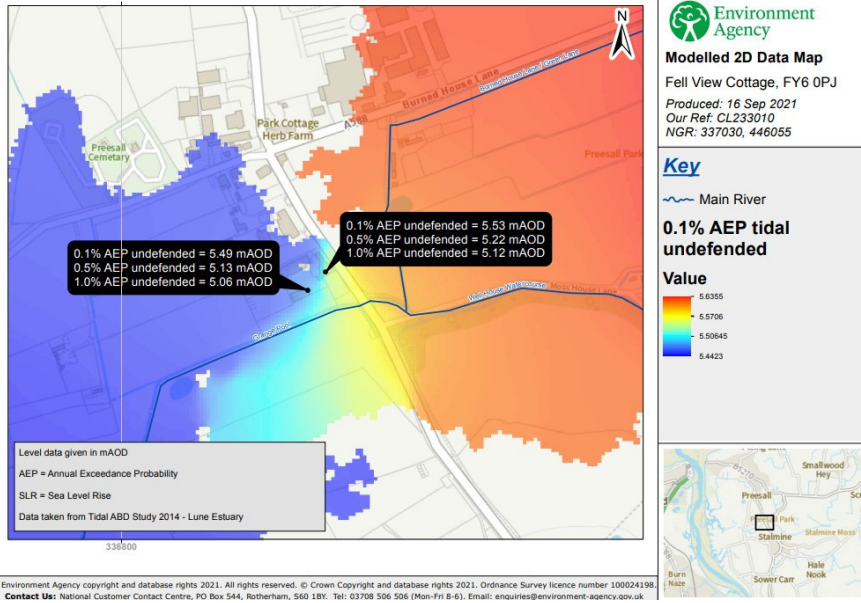
The 0.1% AEP tidal undefended scenario effects the site to a level of 6.07mAOD.

This is not applicable as the application site is covered by flood defenses.

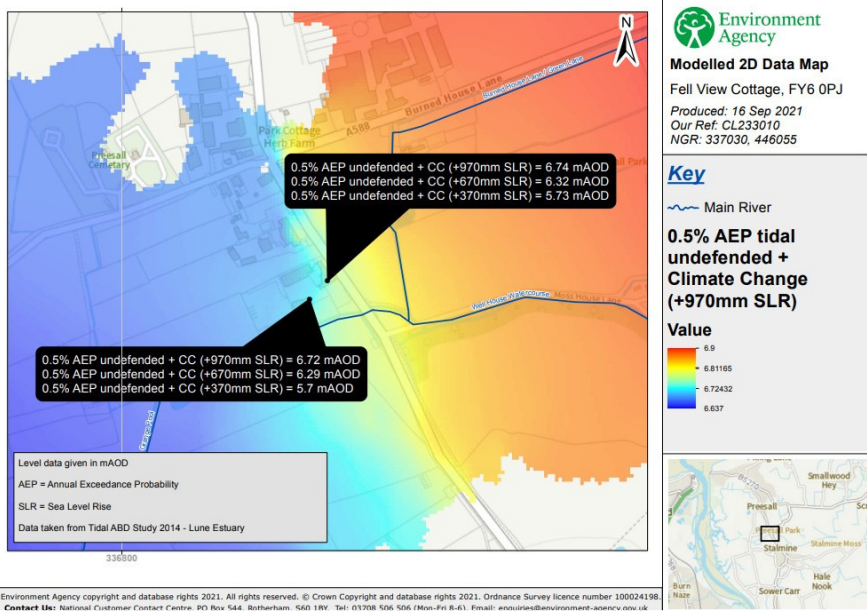


The 0.5% AEP tidal undefended + climate change (+970mm SLR) scenario effects the site to a level of 6.52mAOD.

This is not applicable as the application site is covered by flood defenses.



The 0.1% AEP tidal undefended scenario effects the site to a level of 5.53mAOD.  
 This is not applicable as the application site is covered by flood defenses.



The 0.5% AEP tidal undefended + climate change (+970mm SLR) scenario effects the site to a level of 6.74mAOD.  
 This is not applicable as the application site is covered by flood defenses.



# PREDICTED IMPACTS & MITIGATION

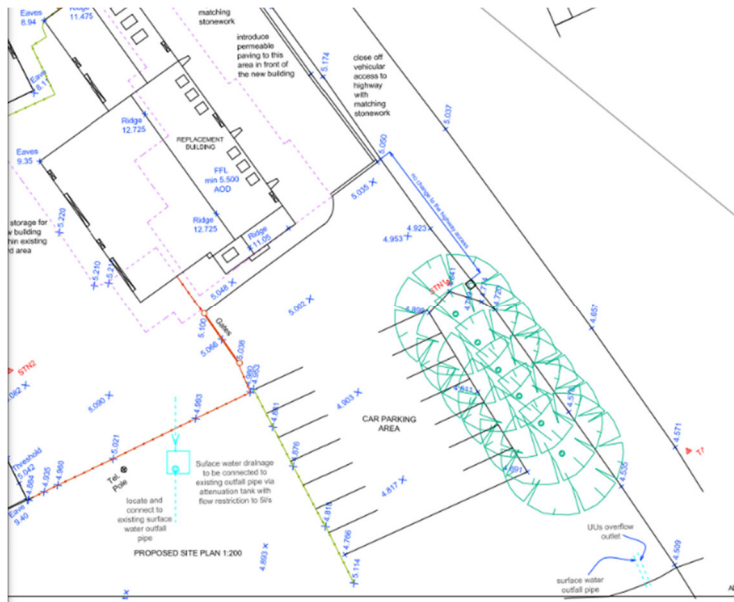
The highest possible flood level as indicated by the EA maps is 6.74m AOD. This relates to the 0.5% AEP tidal undefended scenario + climate change +970mm SLR (2119).

However this relates to an undefended scenario and therefore is not applicable.

The highest relevant flood level would be 6.51m AOD. This relates to the 0.5% AEP tidal defended scenario + climate change +970mm SLR (2119).

**Therefore we will take 6.51m AOD as the design flood level going forward.**

The existing ground level of the site (in the location of the proposed dwelling) is 5.048 m AOD as confirmed by the levels plan below.



It is impractical to raise the ground floor levels by 1.4m to be above this level. It is therefore proposed to raise the ground floor levels by 600mm in line with standard EA guidance and propose flood avoidance measures as follows.

**Finished internal ground floor levels will be set at 5.648m AOD.**

### Mitigation & future proofing against flooding

The site will be future proofed against future flood events. The measures will include

- The use of concrete floors and hard floor coverings throughout the ground floor
- Routing of all electrical wiring down from ceiling level
- All electrical sockets & appliances will be positioned at least 1000mm above internal ground floor level. This will ensure all electrical sockets are above the design flood level.
- Evacuation / flood warning plan (appendix below) to be displayed within the building
- Flood barriers to be installed to all ground floor door openings & any windows with a sill lower than 1000mm above ffl.
- The use of fully permeable outdoor surfacing
- The use of attenuation & flow meters for all surface water
- Registration with Floodline Warning system

## CONCLUSIONS & RECOMMENDATIONS

The site lies within Flood Zone 3 and is defended.

The finished ground floor levels of the proposed building are to be set no lower than 5.648mAOD.

The site owners are to be registered to receive free flood warnings when flooding is expected to enable the evacuation of people for a range of flooding events up to and including the extreme event.

The development is to use flood avoidance as mitigation (detailed above).

# Flood Response Plan



## **FLOOD ALERT**

FLOODING IS POSSIBLE. BE PREPARED.

Site Location: The Old Coal Yard, Hall Gate Lane, Preesall

### Existing Control Measures

The owners are registered with *Floodline Warning Direct* and will receive an early warning notification from them.

A battery operated radio with spare batteries will be kept in the house to monitor local radio news and weather stations.

Charged torches will be kept in the house with spare batteries.

Emergency/portable heating and lighting stored at first floor level within the building.

An open channel of communication maintained with all occupants and visitors to the site.

Sandbags will be palletised and kept in the curtilage where they will be dry and manageable to handle. In the event of flooding these will be used to either help stop water ingress into the building or to keep an area clear for evacuation.

Contact numbers will be in the building in case of flash flooding during the night. Occupants and visitors to the site are made aware of this upon arrival.

A marker post is situated within the grounds and is clearly marked for depth and early warning water build up.

Upon arrival all occupants and visitors are informed that in the need for an evacuation.

Containers are available for use to allow a fresh supply of drinking water to be stored, taking into account each person requires 1.5L of water per day.

Occupants and visitors should refrain from walking through flood water.

## Local Flood Response Plan

Upon receipt of a call from Floodline Watch or information gained from local Radio/TV:

The homeowner / occupant will phone Floodline Watch for an up to date message

A Flood Coordinator will be appointed. This will entail monitoring flood levels via local weather reports and build up of water around the site.

If prolonged weather is forecast and water reaches sufficient levels that breaches the site and surrounding roads is deemed likely, then an evacuation of the ground floor will be initiated until weather improves or local flooding has subsided.

Once all occupants and visitors have left the ground floor, all services (gas, electricity and water) to be switched off at the mains, by the flood coordinator.

## Severe Flash Flood response plan

It is most likely that this will happen during the night and the following response steps are detailed below:-

Emergency services to be called to make them aware of the incident

No bedrooms to be located on the ground floor

All occupants and visitors to remain upstairs inside the dwelling where they can remain warm, dry and free from danger

Local services (Gas, Water & Electricity) to be isolated if possible

Monitoring of the weather to remain constant

Re-evaluate situation hourly if possible and record

Once daylight has arrived, provisions for food, water and full evacuation, (if necessary by the emergency services), to be implemented.

## Contact Numbers

Emergency Services 999

Local Police 0845 125 3545

Transco 0800 111 999

Electricity Northwest 0800 195 4141

Flood Watch 0345 988 1188

Wyre Council 01253 891000

Lancashire Road Flooding 0845 053 0011

Laterooms 0843 713 0641

Last minute.com 0330 100 9126

Travel Lodge 08719 848484

Premier Inn 0871 5279 222

Prestige Taxis (not 24hour) 01253 813000

Poulton Cabs (24 hour) 01253 884500