

Ref: Erect roof over existing sheep pens.
Past field N^o 1654 & 1041
Near Green Road
The Green
Millom

'Rockland'
Lady Hall
Millom
Cumbria LA18 5HR

Flood Risk Assessment.

16/01/2024

Enclosed :- (showing main features mentioned later in the assessment)

- Copy of O.S. map, scale 1:2500 showing
 - A) Location of the proposed building, marked **RED**.
 - B) Field access gate, + basic path to proposed, identified **YELLOW**
 - C) Estuary Tidal protection embankment, identified **GREEN**
 - D) Farm boundary, identified **BLUE**

- The Location of the proposed building, along with all the fields in this area lie within flood Zone 3, but benefitting from flood defences
 - All the land on the west side of the Duddon estuary is protected by an embankment (c) which was completed in 1963 + extends from Millom to Duddon bridge with only one large interruption being where the "Black Beck" enters the estuary at Green Road station (the banking returning both sides of the beck as far as the railway embankment). This embankment was constructed by Lowther estates + from levels taken for an earlier assessment, the height is approx 7.0 A.O.D.
 - All the drainage gutters serving the level land, run + flow to main gutters running inward + parallel to the embankment, + exit into the estuary underneath, at various points, via sluices which appear to be kept in good working order.
 - During heavy spells of rain, the fields throughout this land plane have water standing in hollows, + all the gutters do run full, especially when the tides coincide, + the sluices are closed, causing "back up", but cause no problem
 - From previous environment agency correspondence, the flat calm tidal flood levels in this area are as quoted below :-

1 IN 100 year undefended modelled flood level	= 5.97 A.O.D.
1 IN 200 " " " " " "	= 6.22 A.O.D.
1 IN 1000 " " " " " "	= 6.63 A.O.D.
 - + one model result, allowing for climate change for the year 2115 -

1 IN 200 year undefended modelled flood level	= 7.0 A.O.D.
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- This being the approx height of the existing embankment (c) any wind/gale backed high tide would cause overlapping of the same. Overlapping does happen even now at such times in places where the banking has sunk following culvert repairs etc. The embankment was breached in 2 places near Lady Hall during Feb 2002 + rebuilt after.

- The applicant is aware of the possibility of tidal flooding in the future if the embankment is breached or overlapped, as do all the farmers in this area & they use the tide tables rigorously because their sheep have to be collected & brought off the marsh at each high tide.
- The proposed building will have doors/gates to both east & west sides, so flood water can enter & exit freely without effecting the structure, & because livestock is not permanently housed within, there is no danger to the same.

This area has never been flooded since the embankment was erected. Rainwater is to be harvested for drinking & for use with foot rot bath etc as there is no mains supply available. The overflow from these will discharge into the open drain approx 8 m away to the south.

