

Ref:- A) Erect roof over manure store.
B) Concrete surface existing yard.
Brown Foot Farm
Underhill.
Millom
Cumbria LA18 5HA

'Rockland'
Lady Hall
Millom
Cumbria LA18 5HR

Flood Risk Assessment

28/01/2022

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

- Copy of O.S. map, scale 1:2500, showing :-
 - A) Pos. t.ion of proposal, identified **RED**
 - B) O.S. level 5.79 (19'0) located at centre line of access track, adjacent site entrance. coloured **PINK**
 - C) Open gutter, known as 'Blacken Beck' coloured **ORANGE**
 - D) Estuary tidal protection embankment, coloured **GREEN**
 - E) access track coloured **YELLOW**
- Copy of Gov.uk flood risk information, showing area is LOW RISK
 - 1) From the O.S. level of 5.79 (B) levels taken to existing building floor levels show to be between 5.87 & 5.98 (5.98 being the manure store)
 - 2) An open gutter (C) passes to the east of site, parallel to the access track, 30m from manure store, This normally easily carries any rainwater away.
 - 3) The estuary embankment (D) was completed in 1963 & extends from Millom to Duddon Bridge, with the only large interruption being where the 'Black Beck' enters the estuary at Green Road station. (the embankment returning both sides of the Beck inward as far as the railway line embankment - & a little further inward). This embankment is believed to have been constructed by the owners of 'Lowther Estates' & is approx 7.0 AOD.
 - 4) All drainage gutters flow into a main gutter running inward & parallel to the embankment, & exit into the estuary underneath via sluices, which appear to be kept in good working order.
 - 5) During heavy spells of rain, the fields throughout this land plane have water standing in hollows & all gutters do fill up fully, especially when tides coincide & the sluices are closed - causing back up, but cause no problems.
 - 6) From previous 'environment agency correspondence, the flat calm tidal flood levels in this area are as quoted below.

1 in 100 yr undefended modelled flood level	...	5.97 AOD.
1 in 200 yr	"	6.22 AOD
1 in 1000 yr	"	6.63 AOD
- + one model result, allowing for climate change, predicted for the year 2115.

1 in 200 yr undefended modelled flood level	...	7.0 AOD.
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This being the approx height of the existing embankment (D) any wind / gale backed high tide would cause overlapping of the same. Overlapping does happen even now at such times where the embankment has 'settled' locally, & the embankment was breached in 2 places near Lady Hall during Feb 2002.

7) The enclosed Gov. UK flood risk information dated 23/10/2018, taking into account existing flood defences show the risk of flood from rivers & sea is low & from surface water - VERY LOW, whilst the search address was High Marshside, the map covers the proposed site.

[This map is the same as E.A. flood map for planning, which shows Flood Zone 3 benefitting from flood defences]

8) The A) Cover to existing manure store leaves 50% of its sides open.

B) Concreting yard is open as existing,

so would allow any flood water to enter & exit freely without any damage to building (this also applies to other existing buildings)

9) A) Rainwater from the manure store building is to be harvested, & used for cattle drinking, & vehicle washdown & the over flow drained to the adjacent gutter.

B) Rainwater from the concreted yard is to be drained to adjacent gutter.

All this water will now be clean, as against all dirty presently.

The quantity of water entering the gutter will be slightly less than presently, but clean.

10) The applicant is aware of the possibility of tidal flooding in the future if the embankment is breached or overlapped.



