

Ref: Erect detached double garage

Damson Barn

Underhill

Milkom

Cumbria LA18 5HA

R

04/10/2020

Flood risk assessment.

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

- Copy of O.S. Map. scale 1:2500, showing :
 - A) Position of detached garage. identified **RED**
 - B) O.S. level 200 (6.1m) located at centre of highway, adjacent Bracken Beck house, coloured **PINK**
 - C) Open & culverted gutter known as 'Bracken beck' coloured **ORANGE**
 - D) Estuary tidal protection embankment, coloured **GREEN**
 - E) Access road, coloured **YELLOW**
 - F) Levels taken as part of previous assessments, & this, coloured **BLUE**
 - Copy of Gov. UK flood risk information, showing area is LOW RISK
- 1) From the O.S. level of 6.1 adjacent Bracken Beck House (B) & other levels taken, show the road adjacent the site entrance to be 5.9m, & the ground level in way of the proposed garage as 5.75m
 - 2) There is an open gutter. Known as 'bracken beck' (C) which passes adjacent to the proposed garage on the north side, & which is culverted from the site boundary under field no 5286, exiting near Underhill Cottages. This normally easily carries any rainwater away.
 - 3) The estuary embankment (D) was completed in 1963 & extends from Milkom 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 inwards as far as the railway line embankment). This embankment is believed to have been constructed by the owners of 'Lowther Estates', & is approx 7.0 A.O.D.
 - 4) All drainage gutters flow into a main gutter running inward & parallel to the embankment, & exits 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 the gutters do fill up, 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	indefended	modelled flood level	=	5.97	A.O.D
1 in 200 yr	"	"	=	6.22	A.O.D
1 in 1000 yr	"	"	=	6.63	A.O.D

- + one model result, allowing for climate change, predicted for the year 2115
- 1 in 200 yr undefended modelled flood level = 7.0 AOD

This being the approx height of the existing embankment (0) any wind / gale backed high tide would cause overlapping of the same.

Overlapping does happen even now at such times & 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.

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

- 8) The proposed garage floor level is to be 150mm above the adjacent ground, i.e. 5.9 AOD.

- 9) All electrical sockets & switches etc to be located minimum 450mm above floor level as per Note 5 on detailed plan No 1671, with planning application. All possible contaminants, oils, paints, weedkillers etc to be stored at a high level on shelves.

Flood boards could be provided for the 3 door openings & kept ready for use in the event of forecast flooding, but with the width of the garage doors, it would be more realistic to let flood water in & out freely.

- 10) The applicant is aware of the possibility of tidal flooding in the future if the embankment is overlapped. The applicant is advised to register with the E.A. automatic flood warning system

Yours faithfully