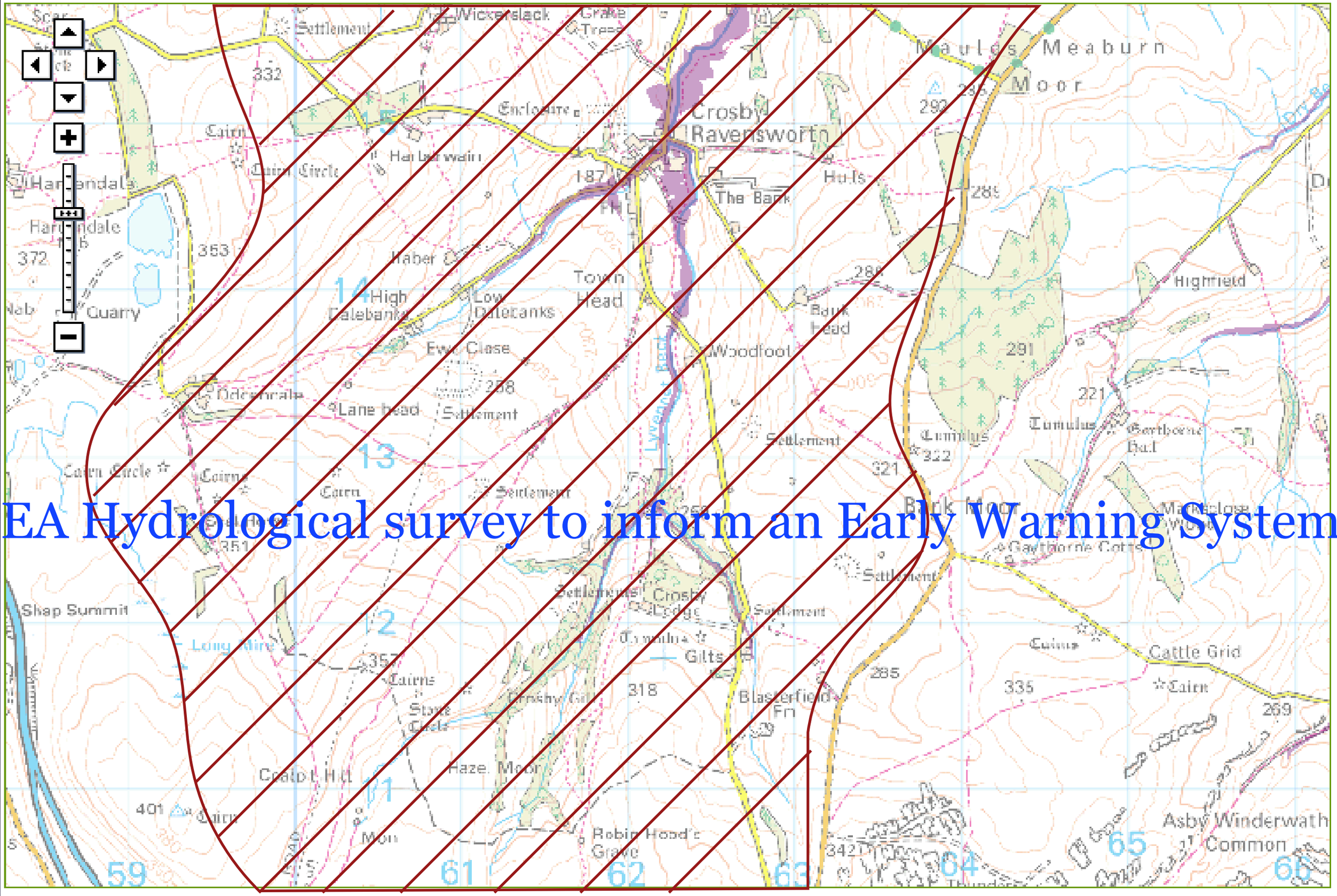
Eden Architecture
Environmental Design

Eden Architecture
1 Stepping Stones
Maulds Meaburn
Penrith
Cumbria
CA10 3HN

A Parish Council Flood Risk Strategy Plan Prepared by: Mike Archer of Eden Architecture

X: 362,239;Y: 513,060 at scale 1:40,000

Other maps · Data search · Text only version



EA Hydrological survey to inform an Early Warning System

Those who are responsible for emergency planning,		
	Responsibility	Responsibility Detail
Environment Agency	• Flood warning. • Emergency response.	• **Carry out flood forecasting** • **Issue flood warnings** • Provide assistance in flood emergencies • Monitor and repair flood defences • Clear blockages • Collect data on flood events
Met Office	• Weather forecasting.	• Forecast extreme weather and tidal surges.
Police	• Law and order.	• Flood emergency planning. · Co-ordinate emergency response. · Interpretation of EA flood warnings · Public safety. · Evacuation.
Local Authorities (County Councils, District Councils and Unitary Authorities)	• Emergency planning • Emergency response	• Carry out flood emergency planning • Interpretation of EA flood warnings • Provide a flood emergency response including road diversions, rest centres and clearing watercourses. • Provide welfare assistance for flood victims • Co-ordinate voluntary organisations. • Clear up and recovery.
Fire Service	• Emergency response particularly fires, road accidents, etc.	• Carry out flood emergency planning • Provide emergency response including rescue • Provide pumping out • Deal with pollution clean up
Health Service	• Public health.	• Provide health support to those affected by floods. • Carry out R&D into health impacts of flooding

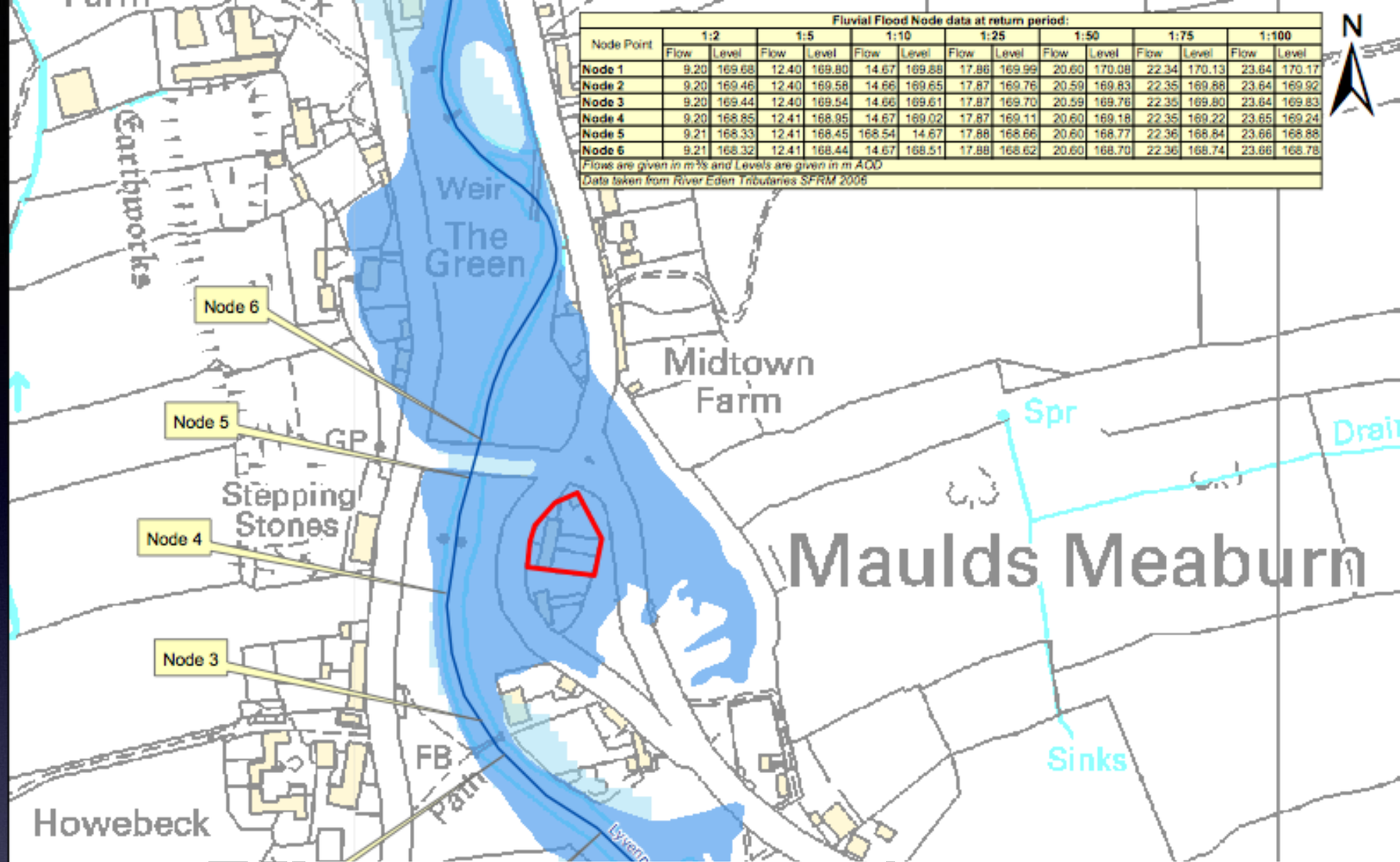
 as this should constitute the trigger for action plans throughout the Lyvennet catchment area.

Parish Council
Flood Risk Strategy Plan

1. Historic actions and consequences
2. properties at risk (On map shown further on)
3. Means of egress (Considerd in full on all planning submissions. UU)
4. Large tractors and trailers (who will provide them/Drivers)?
5. First aiders: (For Example:First Responders; resident local doctors including mental health)
6. Wardens (Trained in their responsibilities: Active flood defences?)
7. Wardens to patrol roads for vehicles in distress
   1. Means Of communication
8. Deliverers: (Local volunteers ?)
9. The Parish Council would like to thank all those who helped recently during the flooding.
10. Place of refuge & organisation:
    1. (MMVI; Crosby Village Hall; Butchers Arms?)
    2. Food and drink

Parish Council Strategic Responsibilities

1. Flood resilience in new build and renovations in all flood zones
2. Sustainable Urban Drainage (SUD's) for all increases in hard standing areas
3. Identify safe routes in and out of villages and the parish.
4. Ensure safe routes are maintained
5. Ensure all drainage is well maintained on priority roads in liaison with the Highways Agency
6. Ensure flood storage is maintained and leaky walls are in good condition.
7. Annual review of the flood Wardens Team are filed and wardens are trained (Funding needs to be found & insurance)
8. Annual Flood strategy plan review of Flood levels & methodologies



Fluvial Flood Node data at return period:

Node Point	1:2		1:5		1:10		1:25		1:50		1:75		1:100	
	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level
Node 1	9.20	169.68	12.40	169.80	14.67	169.88	17.86	169.99	20.60	170.08	22.34	170.13	23.64	170.17
Node 2	9.20	169.46	12.40	169.58	14.66	169.65	17.87	169.76	20.59	169.83	22.35	169.88	23.64	169.92
Node 3	9.20	169.44	12.40	169.54	14.66	169.61	17.87	169.70	20.59	169.76	22.35	169.80	23.64	169.83
Node 4	9.20	168.85	12.41	168.95	14.67	169.02	17.87	169.11	20.60	169.18	22.35	169.22	23.65	169.24
Node 5	9.21	168.33	12.41	168.45	168.54	14.67	17.88	168.66	20.60	168.77	22.36	168.84	23.66	168.88
Node 6	9.21	168.32	12.41	168.44	14.67	168.51	17.88	168.62	20.60	168.70	22.36	168.74	23.66	168.78

Flows are given in m³/s and Levels are given in m AOD

Data taken from River Eden Tributaries SFRM 2006

Environment Agency

Key

- Main River
- Historic Flooding
- Flood Zone 3
- Flood Zone 2
- Areas Benefitting from Defences

Flood Zone 3 shows the are that could be affected by flooding:
- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

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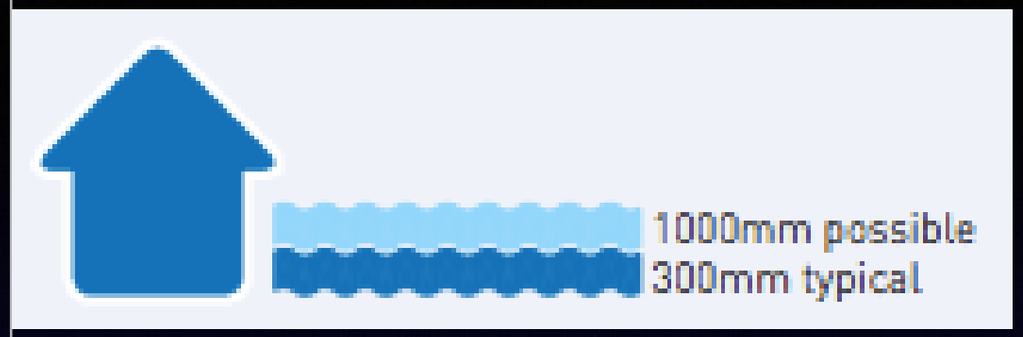
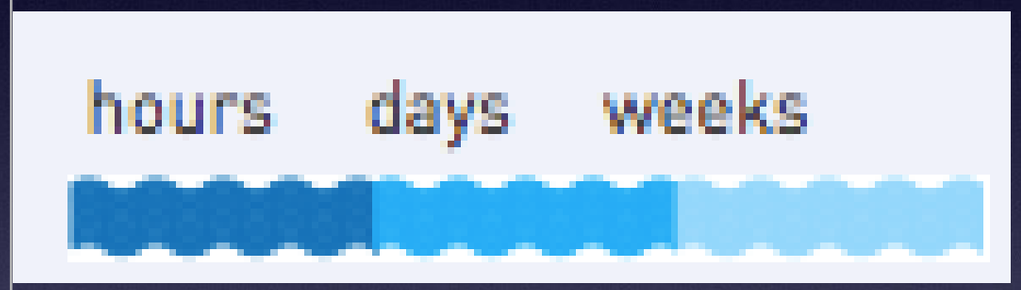
Flows are given in m³/s and Levels are given in m AOD

Data taken from River Eden Tributaries SFRM 2006

Facts about the flood risk FD2320/T2



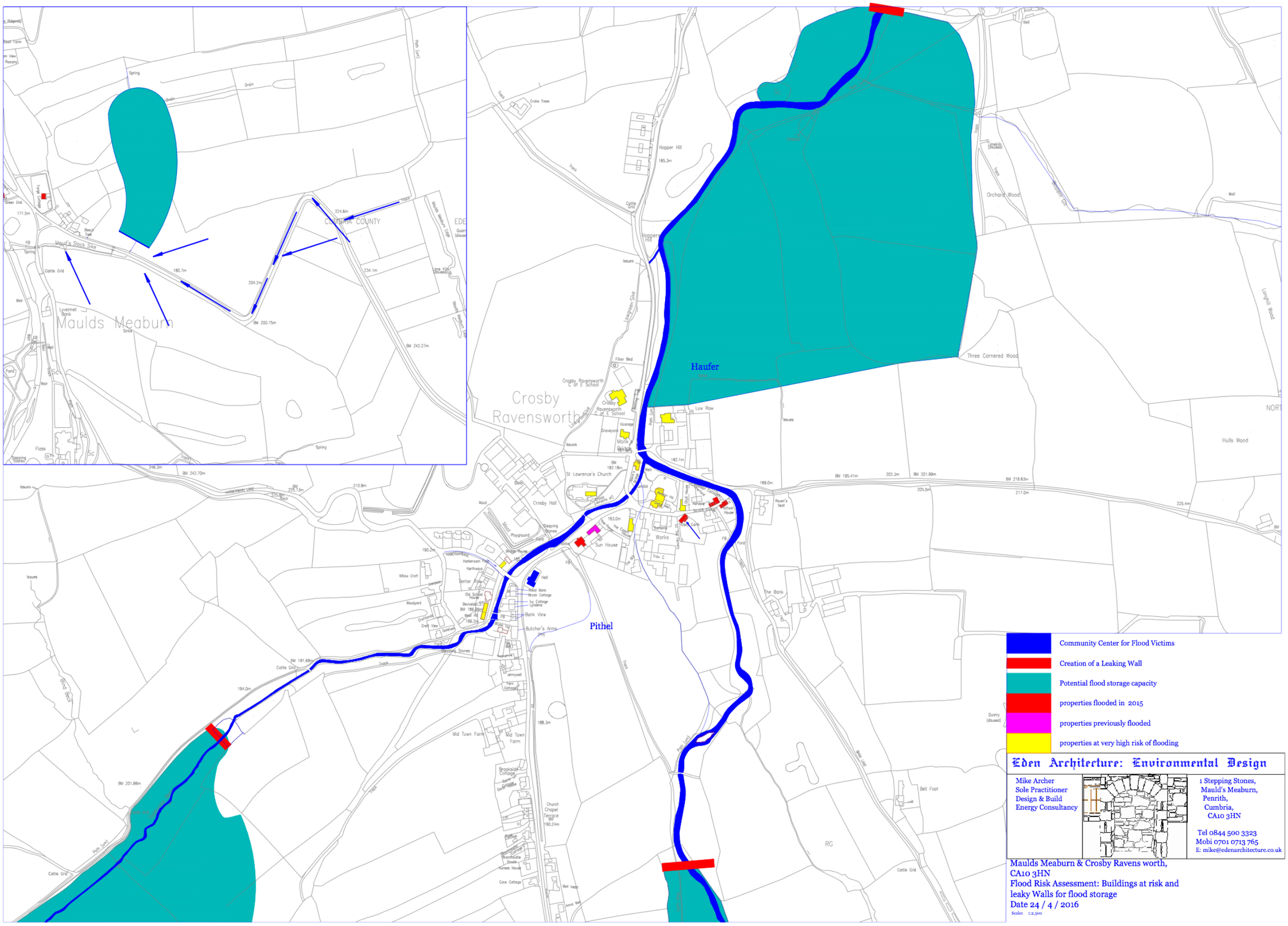
Flood depths expected at your house. Low depths, for example 100mm, are unlikely to put people at risk but water damage to buildings and contents may be significant without any flood protection. High water depths, for example 1m, may severely threaten the safety of people and may cause extensive damage to buildings. It may be dangerous to keep deep floods out of a building because of the large weight of water pressing against the walls.



Flood duration is the time that flood water is expected to stay at your house. Temporary flood defences may successfully keep water out if flooding is expected to last for just a couple of hours, whereas, long flood durations may give time for water to penetrate into the building. It may be safe to take refuge and stay in a building for short duration floods but this will depend on the other factors.

Flood onset is the time for flood water to reach your house from its source. Short onset flooding(flash floods) are particularly dangerous as there is little time available to get people to safety or to protect buildings.

Flood annual probability is a measure of the chance of flooding to your Flood house over the course of 1 year. Different approaches to flood protection may be needed depending upon how likely flooding is expected.


Haufer
Pithel
Maulds Meaburn
Crosby Ravensworth
Community Center for Flood Victims
Creation of a Leaking Wall
Potential flood storage capacity
properties flooded in 2015
properties previously flooded
properties at very high risk of flooding
Eden Architecture: Environmental Design
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Sole Practitioner
Design & Build
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Tel 0844 500 3323
Mobi 0701 0713 765
E: mike@edenarchitecture.co.uk
Maulds Meaburn & Crosby Ravens worth,
CA10 3HN
Flood Risk Assessment: Buildings at risk and
leaky Walls for flood storage
Date 24 / 4 / 2016
Scales 1:2,500

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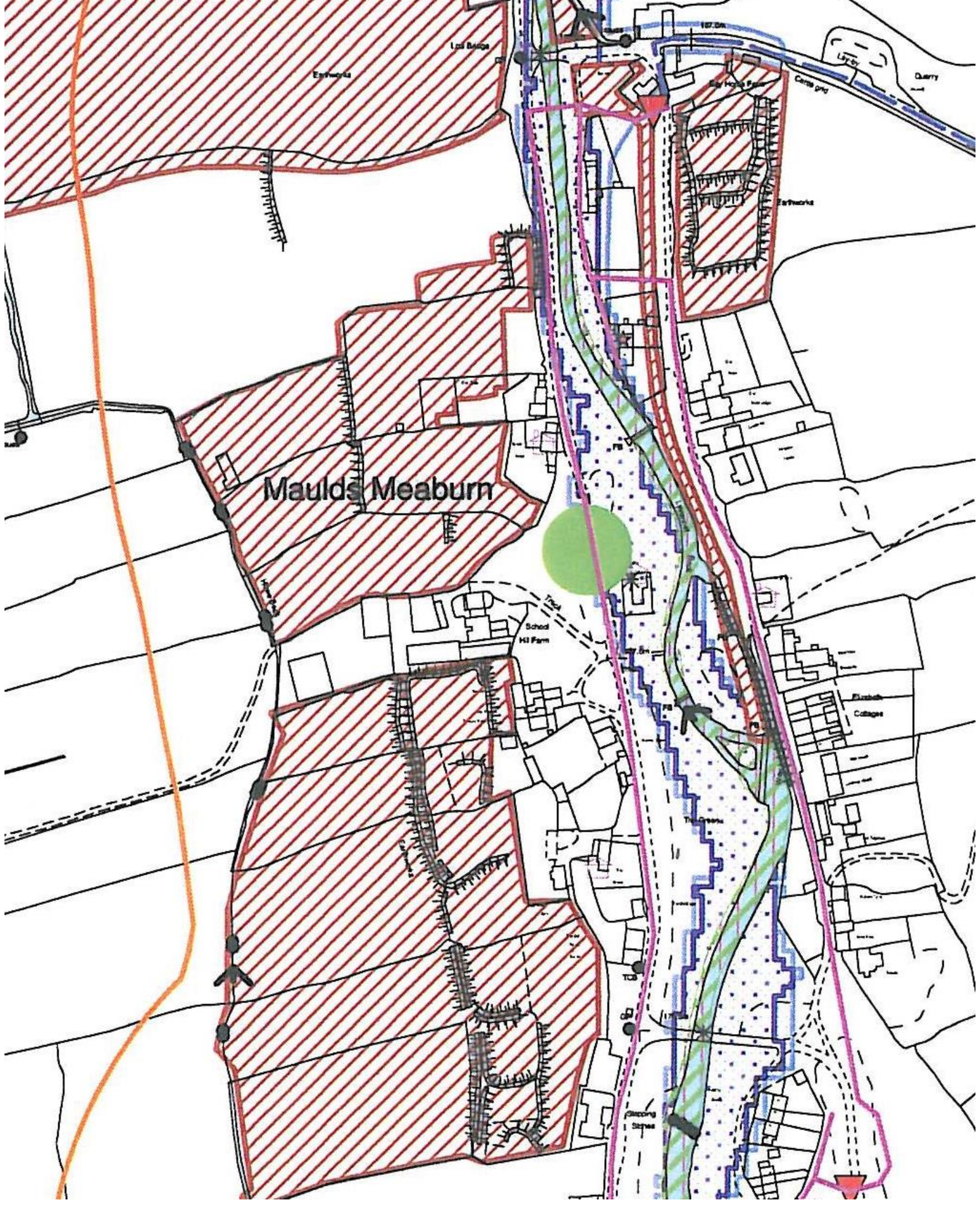
Flows are given in m³/s and Levels are given in m AOD

Data taken from River Eden Tributaries SFRM 2005

M/Sec.	MPH
1	2.236936
2	4.473872
3	6.710808
4	8.947744
5	11.18468
6	13.421616
7	15.658552
8	17.895488
9	20.132424
10	22.36936
11	24.606296
12	26.843232
13	29.080168
14	31.317104
15	33.554



1 in 100 Year Flood Zone

1 in 1000 Year Flood Zone

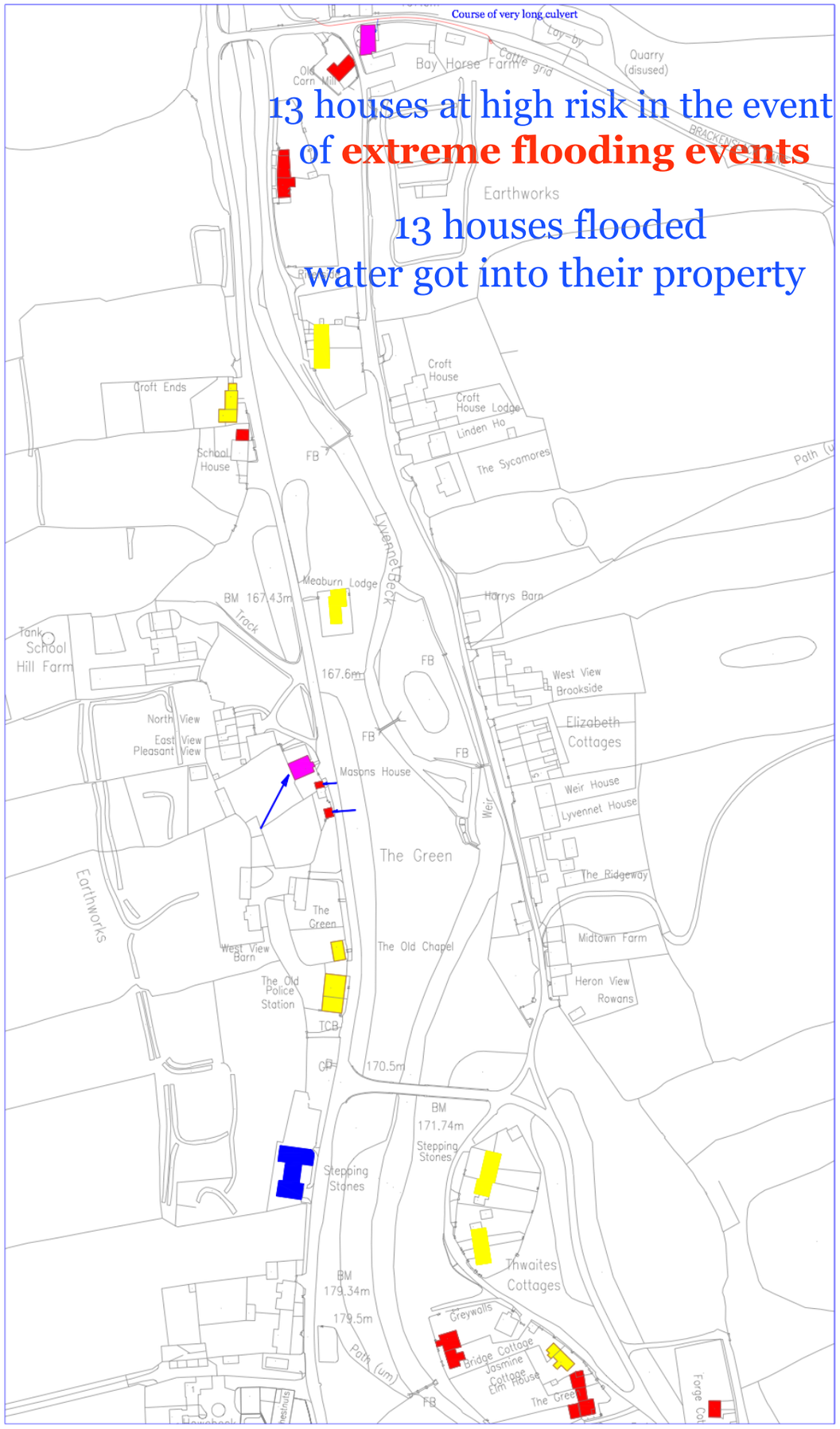
SBI

Scheduled Ancient Monume

Flood Risks to People Phase 2 FD2320_3364_TRP

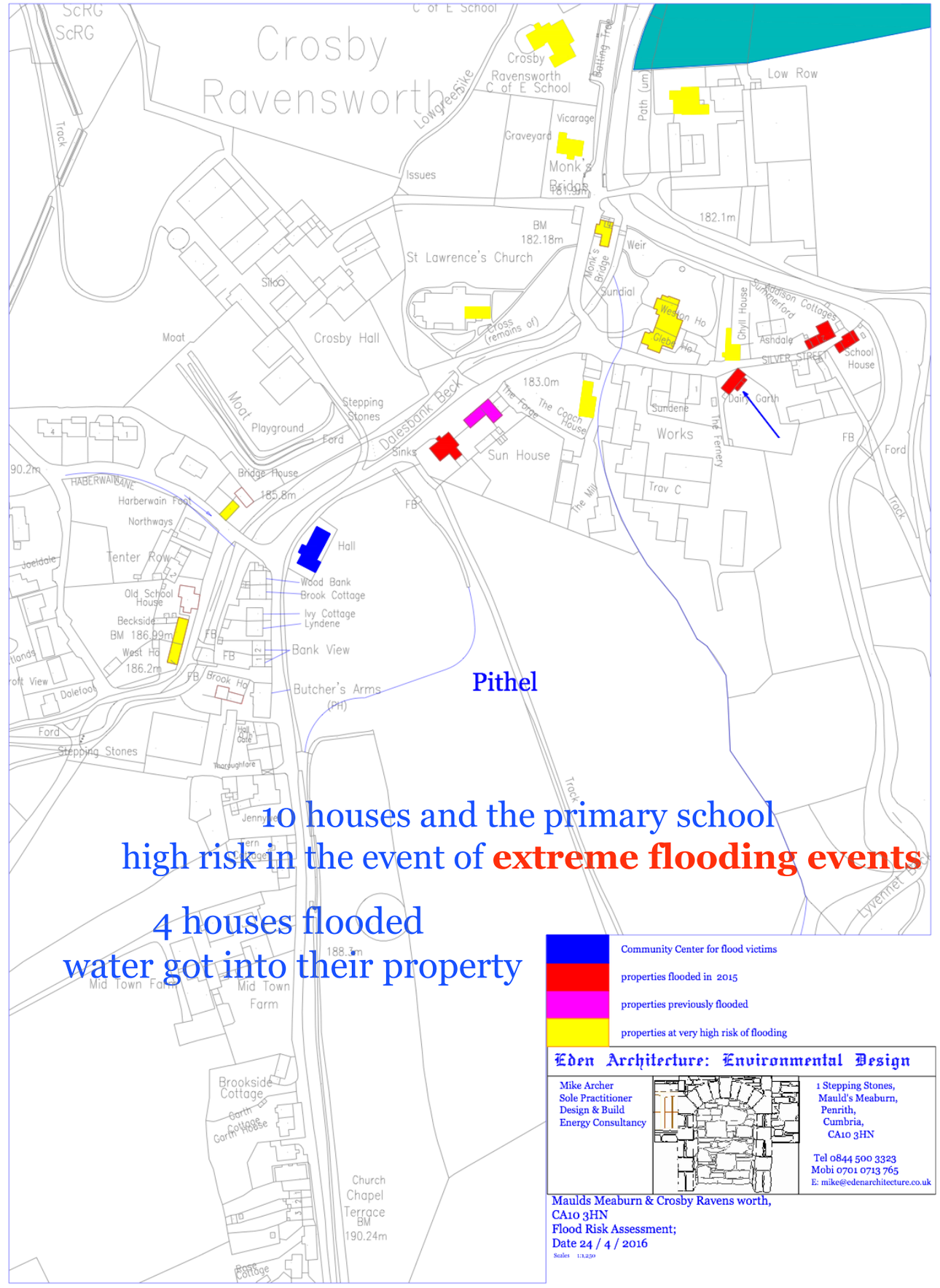
Table 13.1 Danger to people for different combinations of depth and velocity

	Depth of flooding (m)											
Velocity in m/s	0.05	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2	2.5
0												
0.1												
0.25												
0.5												
1												
1.5												
2												
2.5												
3												
3.5												
4												
4.5												
5												



13 houses at high risk in the event of **extreme flooding events**

13 houses flooded
water got into their property



10 houses and the primary school
high risk in the event of **extreme flooding events**

4 houses flooded
water got into their property

	Community Center for flood victims
	properties flooded in 2015
	properties previously flooded
	properties at very high risk of flooding

Eden Architecture: Environmental Design

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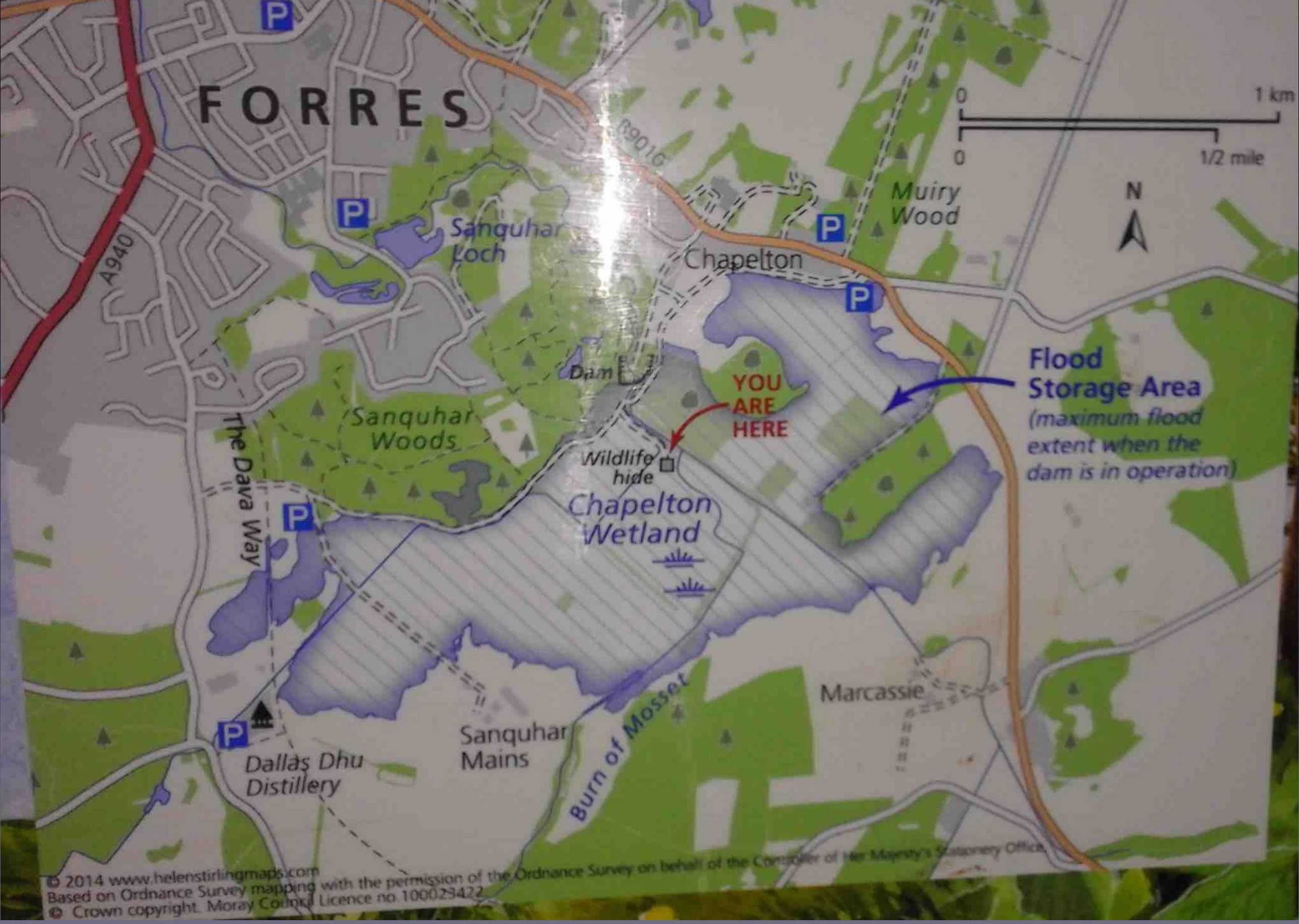
X: 362,398;Y: 514,807 at scale 1:20,000

Other maps Data search Text only version


FORRES
A940
B9016
Sanquhar Loch
Chapelton
Muiry Wood
0
1 km
0
1/2 mile
N
Dam
YOU ARE HERE
Flood Storage Area
(maximum flood extent when the dam is in operation)
Sanquhar Woods
Wildlife hide
Chapelton Wetland
The Dava Way
Marcassie
Burn of Mosset
Sanquhar Mains
Dallas Dhu Distillery
© 2014 www.helenstirlingmaps.com
Based on Ordnance Survey mapping with the permission of the Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office.
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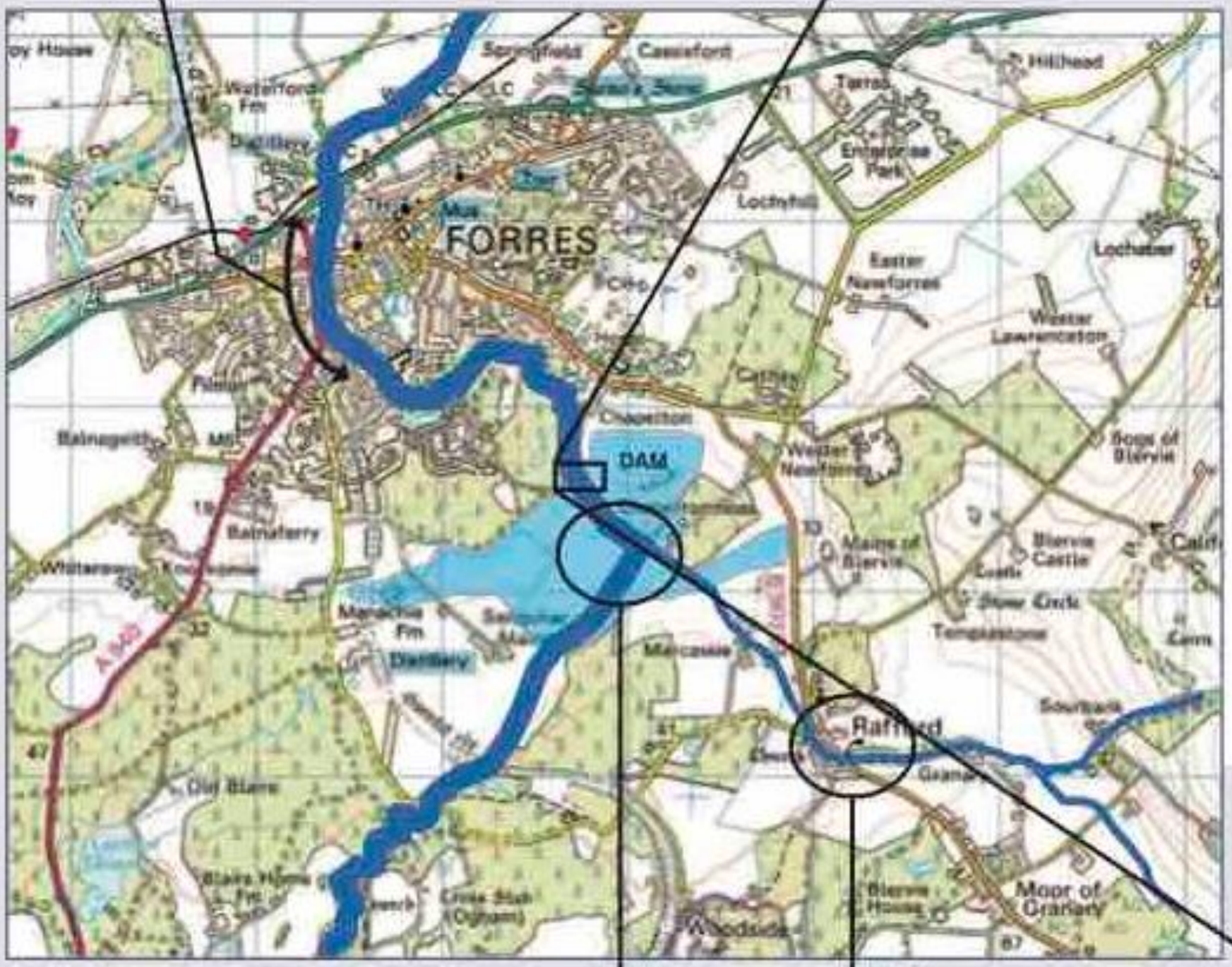
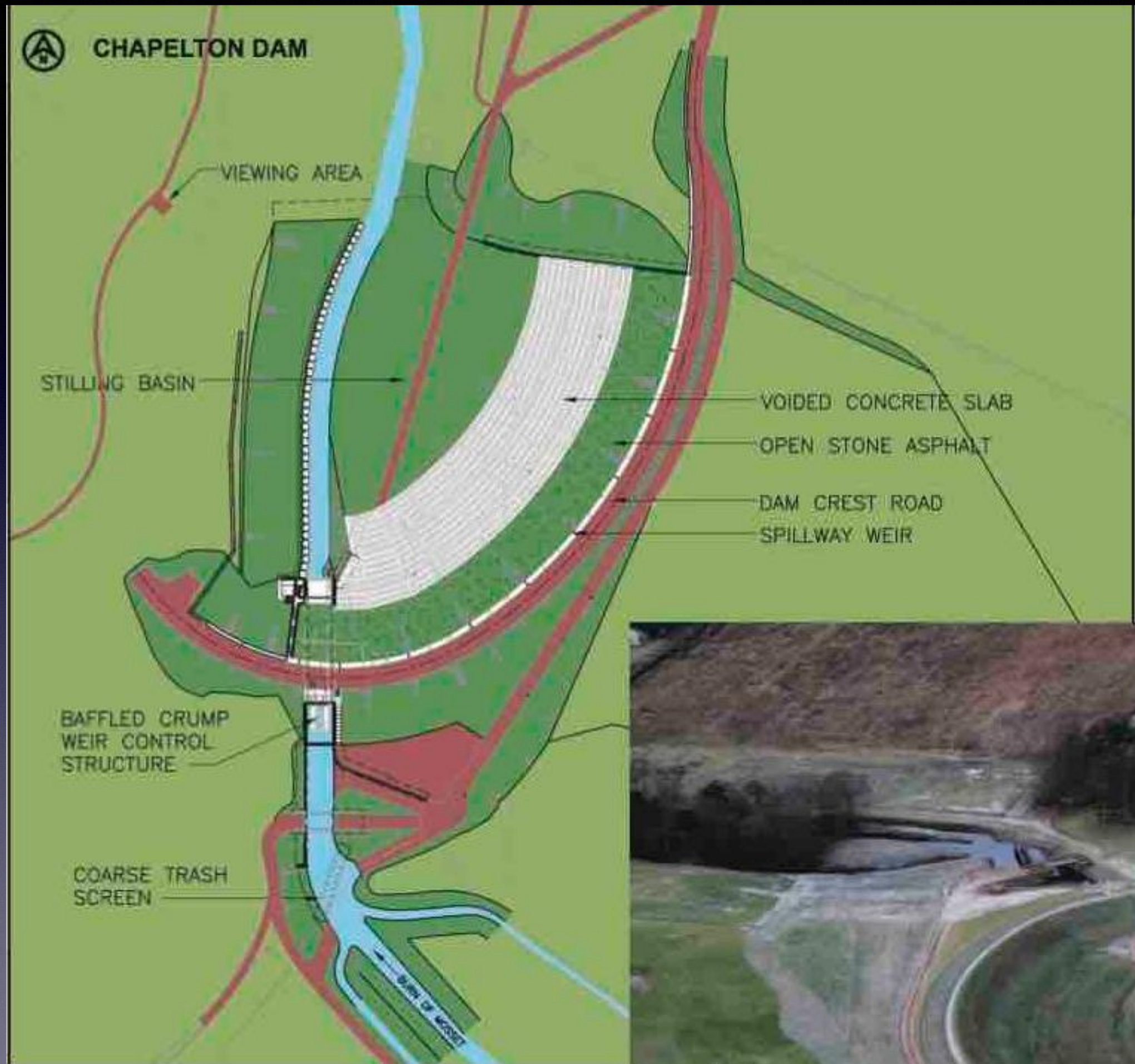

FLOOD DEFENCES
AT FOUR SITES
IN FORRES
FORRES
DAM
Rafford
BURN
MANAGEMENT
WORKS
RAFFORD FLOOD
RELIEF CHANNEL

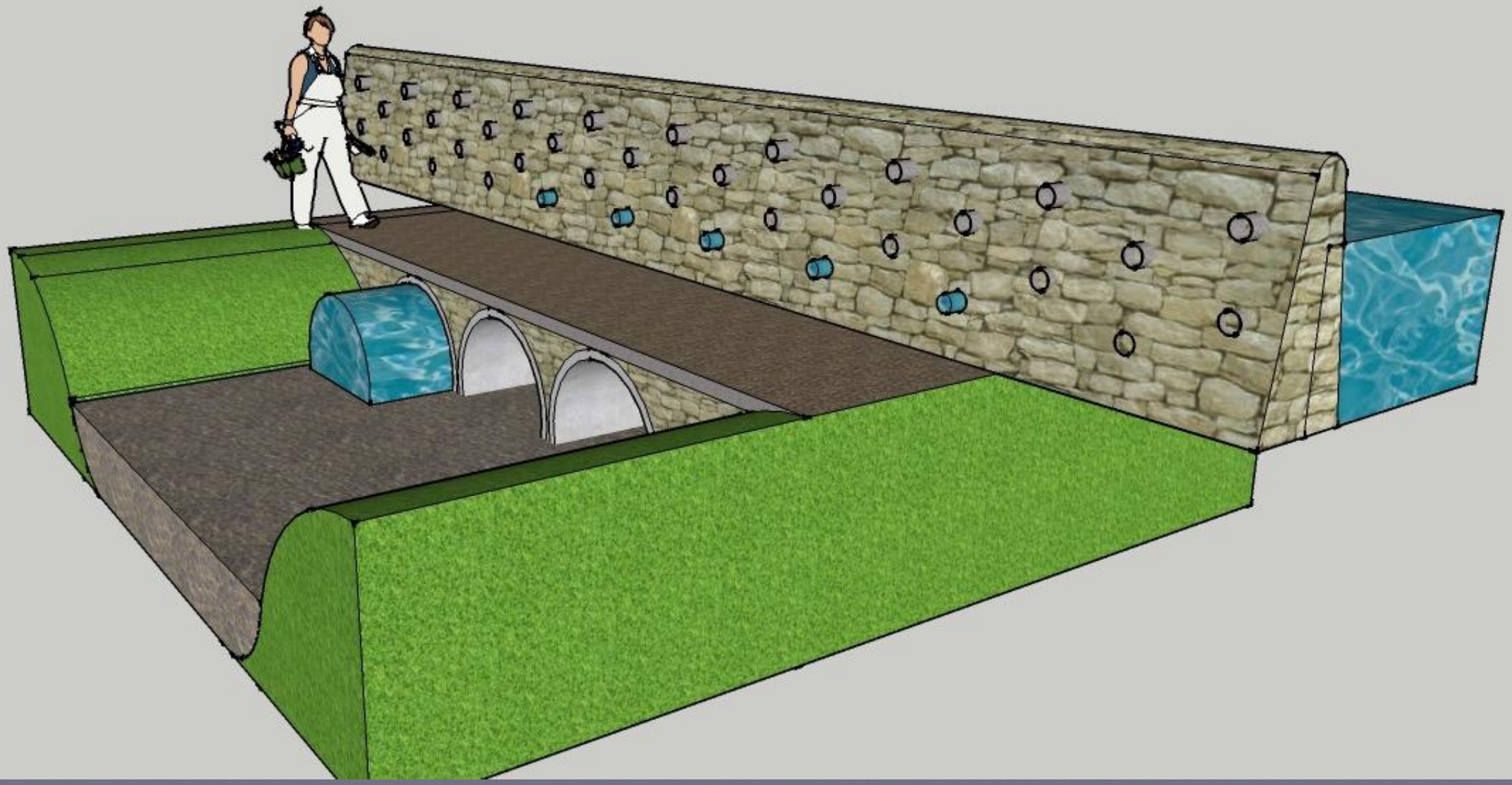


"I challe
deliver
comple
My mea
that the
'invisibl
Not only
but the
ahead o
budget.
the outc

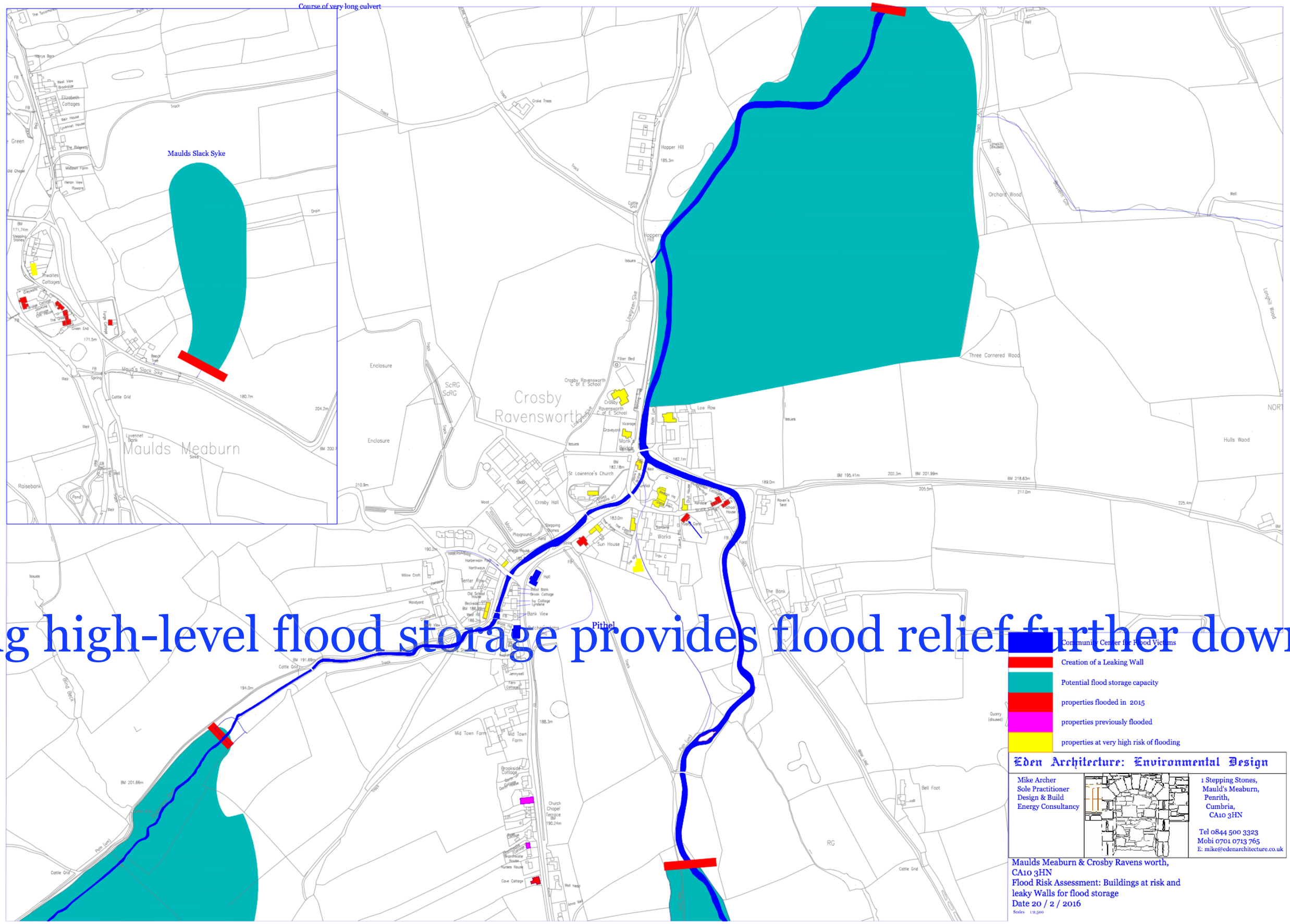
Peter Haslam,

Leaky wall locations:

1. Dale Banks Beck up to Low Dale Banks
2. Flass boundary on Low Row land
3. Maulds Slack Syke
4. Gilts Lane (down street of Holme Bridge)



Course of very long culvert



ng high-level flood storage provides flood relief further down

FD2320/T2

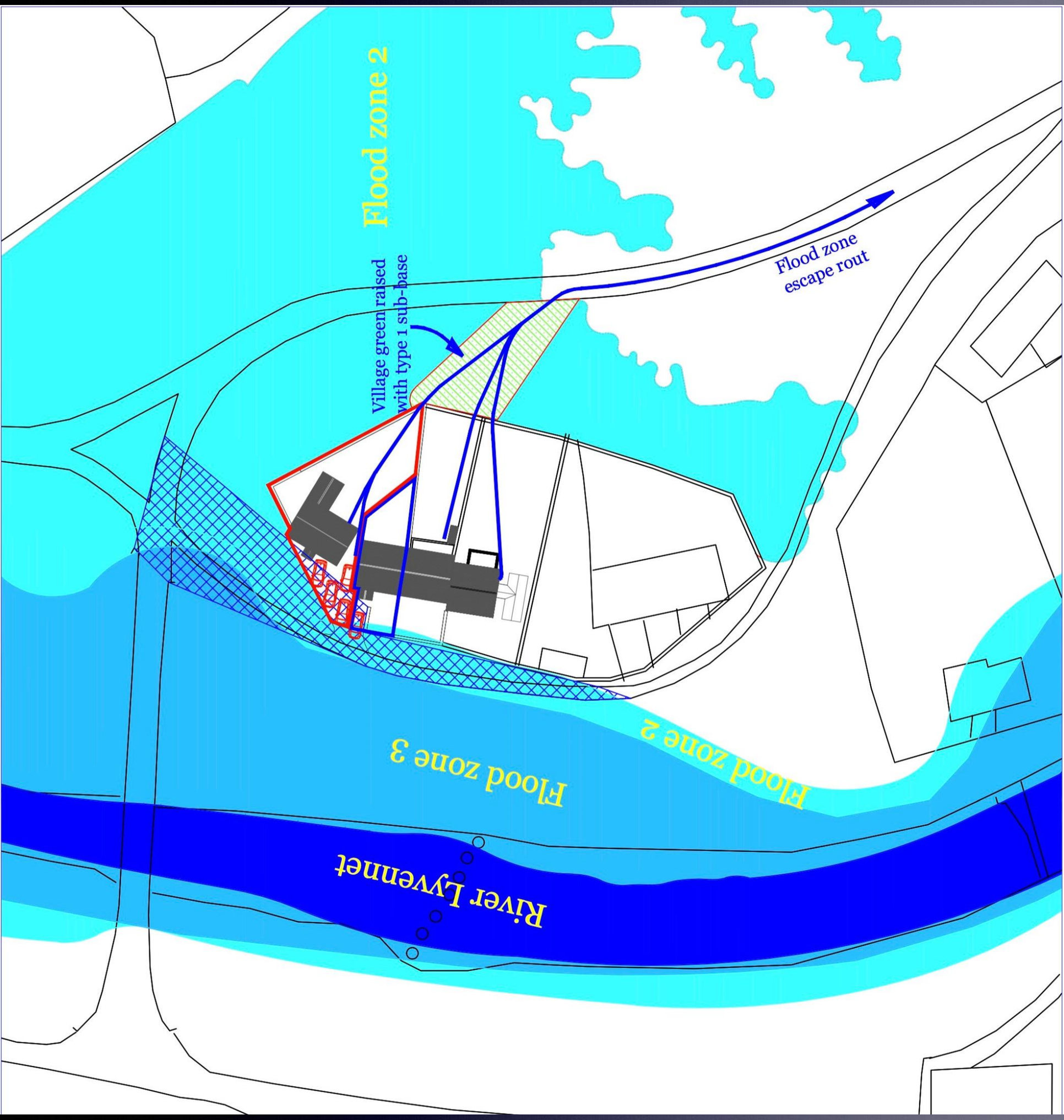
Establishing specifications of means of access & exit;

New developments are required to provide safe access and exit during a flood and the measures by which this will be achieved should be clear in the Flood Risk Assessment (FRA).

"Safe access and exit is required to enable the evacuation of people from the development, ***provide the emergency services with access to the development during a flood*** *and enable flood defence authorities to carry out any necessary duties during the period of flood."*

"A safe access or exit route is a route that is safe for use by occupiers ***without the intervention of the emergency services*** *or others. Safe routes* ***should be identified both inside and beyond the boundary of the new development****. Even where a new development is above the floodplain and considered acceptable with regard to its impact on* ***flood flows and flood storage,*** *it should be demonstrated that the routes to and from the development are also safe to use.*
A route can only be completely safe in flood risk terms if it is dry at all times*."*

The property should, as a condition of planning, form a footpath of sandstone flags or similar solid masonry a minimum of 1m wide, with LED lighting to IP65 for garden lights, with PV solar collectors on 1m intervals up to the gateway; at the gate an L.E.D IP65 flood light.


Flood zone 2
Village green raised
with type 1 sub-base
Flood zone
escape rout
Flood zone 2
Flood zone 3
River Lyvennet

Below is a list of passive design specifications to be included as a matter of good practice:

1. **The FloodSafe 3000 Alarm System**
2. **None return valves to be added to the existing and proposed drains** preventing any flood water flowing back into the proposed development;
3. **Lifting the internal floor level as high as possible:** Freeboard above 1:1000 year flooding occurrence
4. The external leaf of the building to be 250mm coursed snecked rubble, bound with cement based mortar, backed with 7kN dense concrete blocks. This is to be certified by a structural engineer to ensure that it is capable of withstanding hydrological pressures to 1.5m above internal finished floor level;
5. **Solid concrete foundation and floor slab as one integral unit**, with rebar returned into external masonry leaf, effectively tying the external leaf into the ground floor as one homogeneous unit;
6. **Sovereign Hey'di K11 cementitious tanking applied to internal surfaces** of the concrete blocks continuous with the concrete slab to a height of 1.2m above FFL. In line with manufacturer's specifications: full cover with Sovereign tanking fillet to all returned corners totally impregnable to all damp and hydraulic pressures;
7. **All electrics to be kept a minimum of 900mm from the floor** with ring mains housed in the first floor construction;
8. **All openings to have flood defence doors fitted** and a water tight seal formed between them capable of withstanding hydraulic pressures to 1m above internal FFL;
9. **First floor windows to open sufficiently to allow egress** in the event of an extraordinary flooding event.
10. **Natural stone floor covering** that can be brushed down and swilled out if flooding rises above the climate change level.


JT ATKINSON
BUILDERS MERCHANTS
www.jtatkinson.co.uk

http://www.aquobex.com/products/flood-safety-door

FLOOD SAFETY DOOR

Flood Safety Door Awarded the Q Mark Award!What is this?
A new generation in flood protection products, the BSI Kitemarked Flood Safety Door features an innovative, patented design with ISIS Technology™. Requiring no human intervention, the flood door blends into its surroundings with an aesthetically pleasing structure uncommonly found in flood defence products.

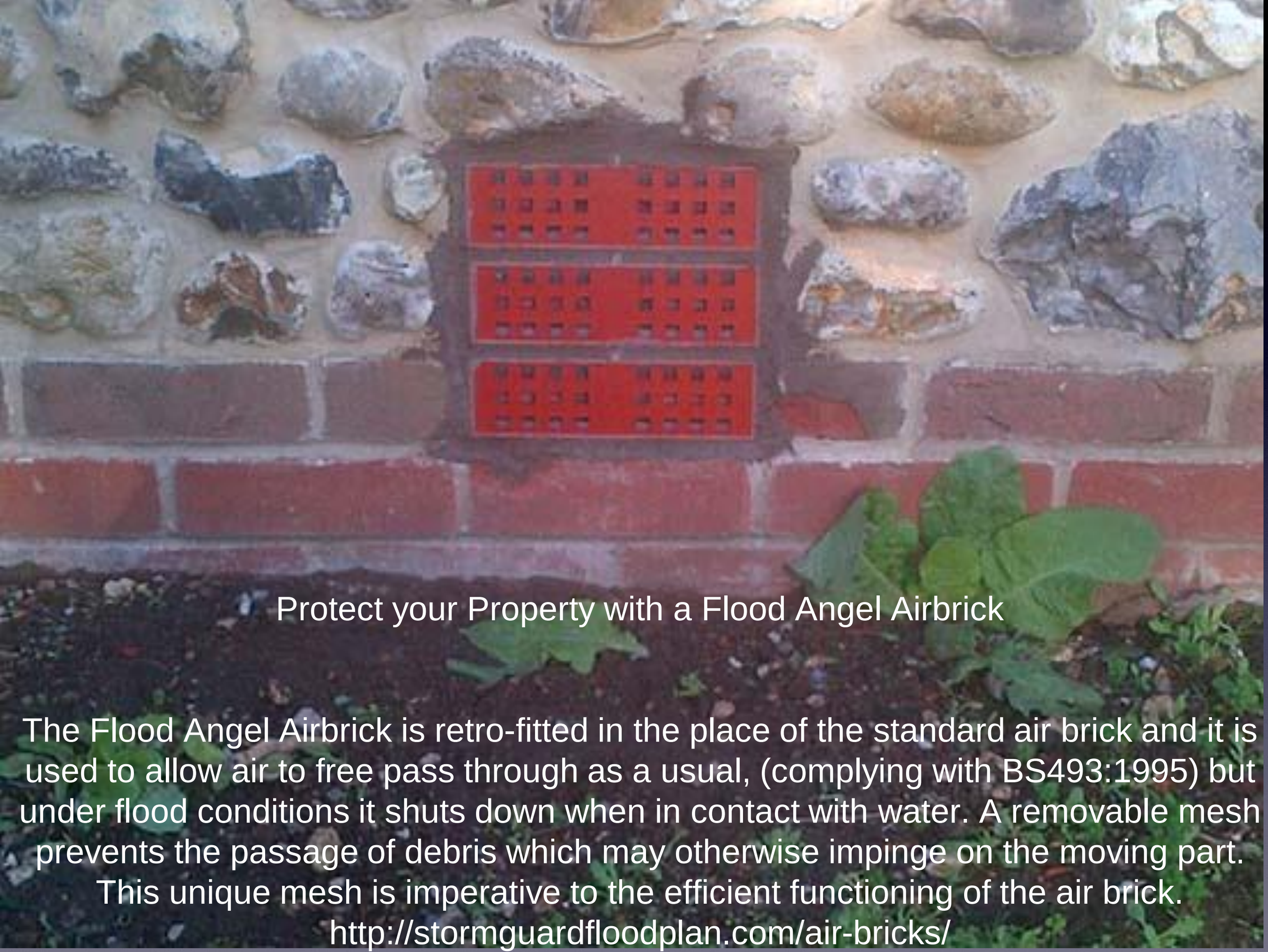
ISIS Technology™ ensures the flood door acts as a barrier up to a predetermined height
01923 518 582
https://youtu.be/rtN4mGJxeYY

Benefits

1. Flood Resistant
2. Independently tested at HR Wallingford for flood protection PAS 1188. Report sent upon request.
3. **Advanced 10 point locking mechanism**
4. Double rebated compression weather seal
5. Every door is given its own unique ID number for tracing, warranty and maintenance purposes.

The FloodSafe 3000 Alarm System

- £55 Non Return Valve local suppliers
- £150 double NVR
- Mechanically locking sealed IC lid.


Protect your Property with a Flood Angel Airbrick
The Flood Angel Airbrick is retro-fitted in the place of the standard air brick and it is used to allow air to free pass through as a usual, (complying with BS493:1995) but under flood conditions it shuts down when in contact with water. A removable mesh prevents the passage of debris which may otherwise impinge on the moving part. This unique mesh is imperative to the efficient functioning of the air brick.
http://stormguardfloodplan.com/air-bricks/