

CASE STUDY

Flood Defence

Grade II listed Cottage, Somerset

Protecting a heritage property against damage from an increasing risk of flooding



Following recent flooding to a Grade II listed property in South West England, Anel and Western Geo Build joined forces to provide a flood defence solution

Anel working in partnership with Western Geo Build for flood defence installations in South West England and South Wales.



Background

The detached 17th century Grade II listed cottage is situated at the edge of a flood zone known as the Somerset Levels. The cottage is adjacent to a stream on its eastern curtilage that takes excess runoff waters from the surrounding hills and exits under a council-owned road culvert to the south of the property.

The original humped bridge was modified to a flat bridge to improve road safety resulting in reduced capacity in the culvert. This, coupled with increasingly heavy rainfall, as recorded in Environment Agency catchment data, means an increased risk of flooding.

The cottage has flooded on three occasions in recent years due to heavy rainfall on catchments already saturated by high rainfall, which has given rise to the combined risks from both surface water fluvial and groundwater flooding.



The stream backing up and flooding into the garden of the property, arrows show the direction of flow.

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The cottage flooded in 2013, 2023 and again in 2024 coinciding with Storm Henk.

The challenge

Following a detailed property survey, including analysis of the Environment Agency rainfall catchment data, there was a need to provide a robust and effective flood defence system, to give protection against an increasing and more frequent risk of floods of a similar magnitude to those in 2023/24.

Damage: The cottage has experienced extensive damage in past floods, making it crucial to protect this Grade II listed property and family home.

Location: The cottage is in a flood risk area with Environment Agency data showing that the effects of climate change mean that there are increasingly more storms and increased rainfall predicted.

Sustainable: The client wanted an environmentally-friendly and aesthetically sympathetic approach.



Making water sustainable for a cleaner and safer environment.

The solution – an effective flood defence installation using Anadel FloodWall and sump pumps

Following the survey, the cottage was shown to be at risk from estimated flood depths of up to 0.6m. The property is on an incline and the lower area needed to be protected from flooding by the installation of an effective flood barrier and associated sump pumps.

Andel FloodWall perimeter flood defence

Western Geo Build carried out the works and installed the Andel FloodWall system on the eastern boundary of the property, adjacent to the stream, up to a point that was above the flood risk height, creating a water exclusion zone in the area at risk.

Andel FloodWall is an environmentally-friendly, robust product, primarily constructed from 100% recycled post-industrial plastic waste that would otherwise go to landfill. It is a modular design which allows for easy transportation and can be quickly assembled on site in a similar way to conventional fencing.

FloodWall has been designed and tested to meet the requirements of British Standard BS 851188-1:2019 for Flood Resistance Products.

Sump pumps

Western Geo Build also installed two sump pumps on the east and south of the property where groundwater flooding had previously occurred. The pumps safely and effectively pump floodwater out of the sumps, over the flood barrier and out beyond the water exclusion zone.

The results

Sustainable: FloodWall panels and posts are constructed from 100% recycled, post-industrial plastic waste, reducing the carbon footprint compared to traditional all-concrete flood defences.

Aesthetics: The barrier has a sympathetic wood-effect finish to fit in with the period environment of this heritage Grade II listed property. The system also had to meet with the approval of Somerset County Council Conservation and Regeneration Officer and confirmation of this was obtained prior to installation.

Effective: FloodWall perimeter flood defence and associated sump pumps provide a robust, tried and tested flood defence solution for the cottage.

Peace of mind: The homeowners are delighted and relieved that they now have a robust flood defence system in place, being in a high risk flood area. Especially now that the local council have confirmed

that domestic flood defences in the county are the sole responsibility of the homeowners, who can no longer depend on council support, even down to the withdrawal of sandbags.

Excellent communication: Andel and Western Geo Build worked closely with the client, ensuring open and constructive dialogue with regular updates on progress and timescales.



What the client said

"It was clear early on in working with Western Geo Build we had gone with the right flood defence system from Andel and the best team for the job in terms of a hands-on and can-do approach from the installation team.

We could not have asked for more. A top UK hydrologist recently visited and commented what a comprehensive system we had invested in and was most impressed by the build and installation quality. Likewise the system sits very happily in the grounds of our Grade II listed property, having the appearance of a rustic garden fence – but with hidden hi-tech credentials!

We can fully recommend Western Geo Build if you are looking for a professional yet personal approach with a competent skill set that is sadly unusual to find with many such businesses. If these are the credentials you need for your project, then look no further than Western Geo Build of Exeter. Thanks, guys, for everything!"

The property owners

Working in partnership with



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