

***FLOOD DEFENCE SYSTEM – SOUTH HINKSEY, OXFORDSHIRE.**

BACKGROUND

Following the exceptional weather in July of 2007, when over 3000 homes in the Oxford area were flooded, we elected to investigate whether it was possible to protect our home from any future event of a similar magnitude. It was our intention to install a system that would make the house resistant to flooding. Making the property resilient entails preventing both surface and ground water from entering the property for an indefinite period of time. That way we would:

- a. Be able to carry on our lives with minimal disruption during a flood event
- b. Avoid the need to make any further claims due to flood on our house insurance policy
- c. Protect our investment in the property in the long term

FLOOD EVENTS

The lie of the local land is such that we will only ever be subject to slow forming river-borne floods, as local water courses are overwhelmed and the flood plain's natural capacity is exceeded.

Local and Environment Agency knowledge both confirm that floods tend to take about three days to rise to the level where property is at-risk, so there is plenty of time to put in place any preventative measures and/or return home from vacation.

During prolonged events, rising ground-water which lags the surface water by a couple of days will also contribute to the volumes presenting risk to the property.

OVERVIEW

We secured the services of Phil Hewitt, Structural Waterproofing Consultant who provided us with a report and also put us in touch with a firm based in Henley-on-Thames, **Stonehouse Basements**, who had experience in carrying out this type of work.

Stonehouse, having successfully tendered, carried out all works associated with the flood proofing, including:

- Fixing of the water-proof membrane to all internal ground-floor walls
- Installation of a base-drain around the ground floor of the property, following the line of the membrane
- Fixing of a water-proof membrane to the floor of the entire ground-floor of the house
- Installation of two sumps and sump outlets, on opposite sides of the house
- Installation of two pumps in each sump, providing a total pumping capacity of 1000litres per min.

The work was completed and the system fully commissioned in October of 2007.

The pumps have a battery back-up system that kicks in in the event of a power failure, and I have two fully maintained, petrol generators which can be activated within two minutes of power being lost. The two exterior doors are sealed with the use of Floodgates which are further sealed using water-proof mastic.

*The system is guaranteed for ten years from the date of installation and backed by Guaranteed Protection Insurance Limited. Since installation the system has been annually serviced by **Stonehouse Basements**.*

SYSTEM TESTING

A flood system can only be properly tested during a genuine flood event. In January and February of 2014, severe rainfall caused water-levels to rise to levels not seen since 1947.

Despite this our property remained dry on the inside.

The depth of water to the exterior of the property was in excess of that seen in 2007 when we were forced to make a £70k claim on our insurance, and yet this time we were able to keep the carpet and furnishings in place, had minimal disruption to our working and family life and were able to live in the property throughout.

IMPROVEMENT WORKS

The sheer volume of water passing was excellent proof that the system worked, but there were signs that the system was under strain. There were some damp patches in the screed layer under the carpet, a small amount of water did find a way through near to the front door and the pumps were working at over 75% capacity. Therefore, the following improvement works have been carried out:

- Enlargement of the rear sump together with an upgrade of both pumps to increase overall capacity to approximately 1700 litres per min.*
- Installation of a Newton 3000 battery and inverter providing better resilience in the event of power failure.*
- Increase in the number of inlets to both sump chambers to increase the through flow of water.*
- Modification of the pump outlets to accommodate a screw on hose connection*
- Improved sealing at and around both the front and rear doors to decrease rate of water ingress*

These modifications, learned from experience and possible through advances in technology, increase the flood protection for our home and have enabled extension of the system guarantee for a further ten years.

SUMMARY

We are in the privileged position of being able to fully understand the underlying cause of the risk to our property by flooding. This has enabled us to have a protection mechanism professionally installed and maintained which guarantees to protect our property in the event of a flood, even if there is an interruption to the electricity supply. This was installed at our own expense with no advisory or financial assistance from local or central government nor the insurance industry.

The protection to our property is no longer theoretical; there is documented evidence of the flood extent in the area at the start of 2014 we remained intact, safe and dry throughout.

We maintain that risk of flooding to our property is less now than at any time in its 350 year history.

**Stonehouse thank Adrian Porter for his kind permission to use this document.*