

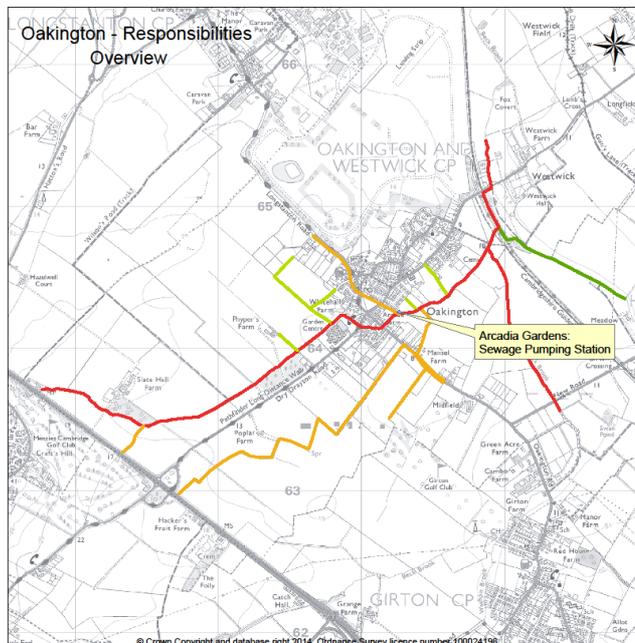
Oakington Property Level Protection Scheme

Lessons Learnt Briefing Note

July 2015

Oakington is a village 7 miles north west of Cambridge. The main river, Oakington Brook, flows through the village and has a number of tributaries that are awarded watercourses. There has been a history of flooding in the village with property flooding occurring in 1978 and 2001. The complexities of the flood risk in the village have been known for some time, with various sources of flooding such as surface water, Main River and ordinary watercourses flooding.

Location map



Key: Red = Environment Agency
Orange = South Cambs District Council
Green & Unmarked = Riparian Owners

The Oakington Property Level Protection (PLP) Scheme was developed to reduce flood risk to 53 properties in the village of Oakington who had suffered from flooding in 1978 and 2001. Whilst the scheme was in construction there was an extreme rainfall event, on 8/9th August 2014, during which 57 properties were flooded internally.

An investigation into the flooding at properties with PLP installed was carried out by JBA consulting. This document aims to summarise the findings and lessons the project team have identified.

Summary of the PLP Scheme

Following consideration of various options for managing flood risk in Oakington, the Environment Agency offered PLP to properties at fluvial flood risk. These properties were selected on the basis of their flood risk and if they had flooded in the previous 2001 event. The scheme started in 2012 and construction on site started in summer 2013. The scheme was partially completed in August 2014, at this time a number of properties were waiting installation of the final protection measures, snagging and final sign off that all measures had been fitted and checked. Training and dry run testing had not been undertaken.

JBA Consulting undertook the design for the PLP at each property. Home owners then had the opportunity to choose from a range of suitable products. Where possible we tried to install passive measures that required no action from the homeowner. However in a few cases this was not possible either because it was technically unviable or the homeowner did not want these products. Whitehouse Construction supplied and installed the products.

The scheme was financed by Flood and Coastal Erosion Risk Management (FCERM) Grant in Aid, RFCC Local Levy, South Cambridgeshire District Council and homeowners.

A dry run and awareness event had been planned for 16th August 2014 which was to give residents, involved in the scheme, information on how to use their products and advice on what to do in a flood.

August 2014 Heavy Rainfall Event

On the 8th & 9th August 2014 there was an unprecedented amount of rainfall in Oakington, approximately 140mm of rain fell within a six hour period. This is equivalent to over 300% of the long term monthly average for August. This resulted in flooding of 57 properties flooding internally, of which 32 were included in the PLP scheme. An additional 60 properties were flooded externally.

Actions Following August 2014 event

A review of the flood warning service provided by the Environment Agency was undertaken and the trigger levels for issuing flood warnings have been revised.

Summary of JBA Investigation

Following the flooding we commissioned JBA to investigate the performance of the PLP products for those properties which had PLP fitted.

The audit aimed to determine the performance and effectiveness of the PLP scheme.

It should be noted that only 15 properties had been completed and signed off, the remaining 38 properties within the scheme were incomplete, to varying degrees.

Key points identified from the audit:

- The rainfall was very intense and localised which resulted in levels in Oakington Brook rising quickly.
- The flooding was from a combination of sources - the river, surface water, groundwater and foul water.
- Training on how to install products was not completed which may have impacted on the effectiveness of the PLP. A dry run was planned for 16th August.
- The lack of individual flood plans meant homeowner's did not know how or where to deploy products such as submersible pumps. Again, this would have been covered in the dry run event planned on the 16th August.

Effectiveness of PLP Measures

Flood Doors

Passive flood doors do not rely on the homeowner deploying the measure, however the activation of the seal is required by shutting the door.

17 households used the doors during the event, 14 of which believed that the doors were effective at limiting the ingress of water.

Flood Barriers

Flood barriers were installed at nine properties, there were some issues with the installation of these which could have been picked up if a dry run had been undertaken at the community event planned in August.

The main issues arose with the type of flood barrier. Barriers which could be slotted into an existing frame proved more successful than barriers which required residents to attach them using bolts.

The products supplied were suitable for the property but not, in all cases, ideal for the homeowner to use in isolation. Having a dry run would have identified this and highlighted the need for a flood plan, to insure that the homeowner received the support they needed to install the product during a flood event.

Skimmer Pumps

The pumps were perceived to be ineffective by the majority of homeowners. However as the dry run had not taken place most had not opened or tested the pump before the flood event, so technical issues were not picked up.

Many of the homeowners that tried to use the pumps reported that they had limited or no effectiveness. However, in some cases the pumps were thought to be effective.

The dry run would have given people an opportunity to try out the pumps and determine where best to locate the pumps to increase their effectiveness in evacuating water from the property.

Non return Valves on foul chamber

Non return valves operate automatically preventing foul water backing up into the property in the event of a flood. Where non return valves had been fitted, these were effective.

In properties on the Broadway the flooding identified additional ingress routes, in the wet room, shower room or bathroom, which are now being reassessed.

Other contributing factors identified

Timing of the flooding

- The flooding to properties occurred in two stages. The first surface water flooding occurring in early evening of 8th August and the second stage involved flooding from the watercourses in the early hours of the 9th August.
- The timing of the flooding meant the defences were being deployed in darkness making it much harder to install products.

Lack of a practice run

- Residents had not had a dry run, scheduled for 16th August, or practiced installing their products.
- Community or individual flood plans had not been produced.

Home owner appreciation of residual risks

- Residents were informed that PLP would not completely prevent ingress of water; the risk of water coming through the floors was highlighted in the initial survey report. The limitations of PLP were also discussed at the drop in surgeries at the start of the project.

Flood warning changes

A new river level gauge had been installed on the Oakington Brook in 2013. At the time of the event it was being calibrated for integration into the flood warning system. This event provided a valuable source of data to finalise the calibration. We have now carried out analysis and have implemented a trigger level for the Oakington Brook, which will be used to issue the flood warning in the future.

Initial Lessons Learnt from PLP Scheme

Community Support

- A Flood Action Group ought to be set up by the community as part of the development of a scheme.
- Continue to support the community to develop a flood action plan throughout the life of the scheme.
- Encourage homeowners to write individual flood plans so they know when and where to pump to, when to deploy barriers and what to do if they are not at home in a flood event. Ideally this should be done as early as possible in the life of the scheme and be updated as the products are installed.

Training

- Ensure training is given to homeowners to operate the products when they are installed or delivered. This is particularly useful for flood boards and pumps.
- Ensure a suitable training day is set up as soon as possible after the installation of products.
- Communicate the limitations of PLP and support the homeowners to fully understand the change in risk to their property.

Contact Details

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