Developments in Property Level Protection –
APSE, Oxford – 17th July 2014

Peter May - JBA Consulting
Assessing the benefits of property-level protection...

“Storms and flooding: Insurance claims hit £426m, says ABI”
BBC News – 28th January 2014
Assessing the Benefits of Property-level Protection

We *can* do better than sandbags!

- Largely ineffective at reducing flood risk
- Significant resource and disposal burden on local authority
- Homeowners need better tools to reduce damage
- Greater peace of mind
Sandbags and boards... best efforts but so last century!

Sandbags and plastic sheet

Sandbags – largely ineffective

Makeshift property protection
A need for Property-level protection (PLP)

MAKING DO

HELP!

V. SCARED

SCARED

PLP - Providing much needed support to those at highest flood risk

Photo by kind permission of Nicolas Delerue
Improvised property-level protection......

Wheelie bin barrier!
Flood Protection Hierarchy – plugging the gap

Increases in:
- Standard of Flood Protection
- Scheme Cost
- Peace of Mind
- Insurance Options
- Property Value

Traditional Defence Schemes

Sandbags

Do Nothing

...in addition to catchment management
Do Nothing...

Flooded homes – damage and stress!
The need for property-level protection...

Imagine this is YOUR home
.......what would you do?
Flood Protection Hierarchy – gap plugged!

Increases in:
- Standard of Flood Protection
- Scheme Cost
- Peace of Mind
- Insurance Options
- Property Value

Traditional Flood Defence Schemes
Temporary Flood Barrier Schemes
Property Level Protection
Sandbags
Do Nothing
Temporary Flood Barrier Schemes – e.g. Ironbridge

Frequent flooding of Ironbridge

Barriers deployed by EA and LA teams

Homes and businesses protected
2007 Summer floods – temporary barriers protecting critical infrastructure

....temporary flood barriers save the day at Walham!
Property-Level Protection: Resistance Measures

Kitemark testing of products

Automatic Measures

Automatic airbricks

Full port non-return valves

Manual Measures

Patio door barriers

Door and window barriers

Flood doors
Property-level Flood Protection

**Resistance Measures**
Limiting water entry into a property through the use of:

- Door barriers / flood proof doors
- Airbrick covers / automatic airbrick replacements
- Non-return valves
- Pumps
- Waterproof sealant
- Garden walls used as flood barriers

**Resilience Measures**
Allowing water entry, making the property fabric and services more robust:

- Solid concrete floors
- Tiled floor coverings
- Raised electricity sockets
- Valuables/paperwork stored above flood risk
Developments in Property Level Protection

PLP offers a new tool in the box

- Homeowners and businesses have a more effective option to tackle floods
- Research in England and Wales indicates a positive benefit from PLP funding
- Seen as a useful FRM measure to support communities at risk that may not benefit from traditional flood defences
- Government is keen to encourage more local authorities to set up PLP schemes
Developments in Property-level Protection

Assessing effectiveness of PLP for homeowners

- Raising flood awareness alone simply raises anxiety
- Empowering communities to take effective action
- Need for low-cost flood protection measures
- Easy to implement
Developments in Property-level Protection

Assessing effectiveness of PLP for homeowners

- Collecting evidence of PLP performance in a flood
- Questionnaires and interviews
- Raising awareness and encouraging wider up-take
- Recommendations for best practice
Development of Property-level Protection

- Reliance on sandbags – largely ineffective.
- 2007 Summer Floods – renewed impetus and demand.
- The Pitt Review - need a range of measures to manage flood risk including property-level mitigation.
- Not feasible to provide flood defence schemes everywhere.
- Slow uptake of PLP due to:
  a) Lack of awareness
  b) Funding constraints
  c) Uncertain insurance response
Assessing the benefits of Property-level Protection

Review of 2 year Defra PLP Grant Scheme:

- 63 PLP schemes for over 1100 properties
- 40 Local Authority post-scheme Evaluation Reports
- 80 attendees at 2 Stakeholder Workshops
- 9 Case Studies for detailed assessment
- Flood Group meetings with residents
- 56 telephone interviews with residents
Property-level Protection Defra Grant Scheme

Successfully:

- Created demonstration areas promoting benefits and encouraging further take-up.
- Stimulated the supply of high quality flood risk surveys by competent and independent surveyors.
- Encouraged the development of new and innovative flood protection measures.

PLP in action

- But awareness of PLP remains low
- PROPERTY PROTECTION ADVISOR aims to raise awareness and encourage effective action
Plenty to consider – but rest assured.....
Property level protection - a Four Stage Approach

- **Stage 1 - Appraisal**
  - Appraisal, engagement & survey

- **Stage 2 - Selection**
  - Product selection and procurement

- **Stage 3 - Installation**
  - Installation & handover

- **Stage 4 - Aftercare**
  - Aftercare, operation & insurance
PLP Grant Scheme evaluation findings....

- Effective engagement with residents critical for success
- Raising awareness and gaining buy-in
- Property surveys to be independent from suppliers
- **Homeowner’s report**: flood risk assessment; flood history; threshold level, recommendations
- Excellent products available, including automatic measures.
- Homeowners prefer a choice of products
- Need impartial advice on measures suitable for property and person
- Right product for the person
PLP Grant Scheme evaluation....

- Quality of installation
- Guidance on correct storage and maintenance.
- Communities working together supporting each other.
- Develop emergency flood plan

- Flood warning
- Emergency plans and dry runs
- Community support
- More affordable insurance - wider uptake.
Feedback from residents - 93% take-up; very grateful but......

- “I didn’t know about PLP....”
- “I did know but it’s the Government’s job...”
- “I’m willing to pay but need guidance”
- “I’m frightened it will blight my property.....”
- “I would have liked some choice of product....”

EASE OF USE & SPEED OF DEPLOYMENT
CRITICAL ISSUES FOR PRODUCT CHOICE
Feedback from residents - 93% take-up; very grateful but......

**EASE OF USE AND SPEED OF DEPLOYMENT**

Vulnerable people need care and help – community assistance

“As I am over 80 and disabled, how do I assemble the flood protection products? Most of my neighbours are in the same position”........

Highlighting the need for:
- Local Flood Group;
- Barrier Buddies;
- Flood Wardens; and
- Emergency plans
Property-level Protection - funding

PLP Cost effectiveness study:

- Assessed a range of property-level protection measures:
  - Property type; Flood frequency; Costs; Reliability etc – over 22,000 scenarios examined
- Manual Resistance the most cost effective option
- Higher cost of Automatic Resistance measures - lower benefit cost ratios but still significant cost effective opportunities
- High cost of resilience measures – funding support to resistance measures
Stage 1 – Appraisal, Engagement and Survey

Community Event

PLP survey process and report

Resident agreement and sign-up for PLP survey

Book your survey

Communication JBA's bespoke 'JProp' system
Stage 1 – Appraisal, Engagement and Survey

Community Events

- Awareness raising
- Initial engagement with residents
- Opportunity to meet the team
- Find out more about PLP
- Managing expectations
- Resilience / Resistance

Seeing is believing at product testing sites
Stage 1 – Appraisal, Engagement and Survey

Resident agreement and sign-up for PLP survey

- Independent survey by flood risk experts
- Requires a level of buy-in from residents
- Collect evidence and flood history
- Encouragement to continue onto installation phase
Stage 1 – Appraisal, Engagement and Survey

- Approximately 90 minutes
- Staff to carry identification and letter of authority at all times
- Identifying ingress routes from all flood sources following Defra/EA template
- Homeowner preference/requirements

PLP Survey Process

Issue reports
Stage 1 - Example PLP Report for the Homeowner

Property Level Flood Protection
Survey Summary and Recommended Works

1. General Details

Property Reference Number: HORN001
Name: Douglas & Sally Gregory
Address: Beacon View, Horner
Post Code: TA21 8HY
Phone Number: 01643 882201
Local Authority / Lead Local Flood Authority: West Somerset Council
Type of Property: Terraced
Owner / Tenant Occupied: Tenant occupied
Length of Time at Property: 18 years
Owner Name: National Trust
Has the property been affected by flooding? No
If Yes, To What Extent? N/A
Is The Property Listed? Yes – Grade II
Is The Property Within A Conservation area? No
Local Flood Community Group: Yes
Flood Protection Survey Date: 13/02/2013 11:30:00

Risk posed to properties located in the Porlock to Minehead region has been
highlighted by the Environment Agency (EA) and detailed in the West Somerset Catchment
management Plan produced in June 2012. This shows that Horner lies below the
slope within the Horner Water Valley. This area has been highlighted as an area
from flooding which occurs on roads and to isolated properties as a result of river
flows. Rapidly draining water from steep hills causing surface water flooding has also
become an issue.

Level protection (PLP) measures have now been identified as the most viable and
effective option available to help mitigate the flood risk. As such, the EA is
providing that the Horner Property Level Protection scheme proceeds.

JBA Consulting has been appointed by the Environment Agency to carry out property level
surveys at each property considered under the Horner PLP Scheme and in
neighbouring Allerford and Bossington. This report presents the
results of the survey of Beacon View.

A base plan is annotated on the main outline of the property which has been annotated with the main
features of the property and any flood risk points.

Key information:

- Survey date: 13/02/2013
- Location: Beacon View, Horner
- Height (m AOD): Ground level 65.90, Front door threshold 65.72

Please refer to the Environment Agency's guide for further information.

environment-agency.gov.uk/homeandleisure/floods/31644.aspx
Stage 2 – Product Selection and Procurement

**Report Surgery**
- Opportunity to discuss report with project team
- Fully understand their ongoing role (storage/maintenance)
- Final product selection and sign-up

**Procurement Process**
- Support
- Pricing Schedule

**Appoint Supplier**
Stage 3 – Installation and Handover

**Supplier Survey**
- Dedicated team
- Clear point of contact identified

**Installation of Products**
- Clear communication with residents throughout

**Handover with Residents**
- Demonstration of products to residents
- Information packs
- Post installation survey and reporting
Stage 3 – Installation and Handover
PLP – training, testing and maintenance
Stage 3 – Installation and Handover

PLP – testing the products....and the people!
Stage 4 – Aftercare, Operation and Insurance

On scheme sign-off, residents should:

- Be confident that they can deploy the products provided
- Understand their ongoing role
  - maintenance/storage
- Join a Flood Group
- Develop Emergency Plans
- Carry out annual tests
- Contact insurance providers
Evidence and belief - 2012 floods: PLP in action!
Assessing the benefits of property-level protection

PLP performance during 2012 floods:

“The installation was completed in 2 days; the contractor showed us what he was doing, and then gave on the spot training.”

Bin Brook, Cambridge

“Properties flooded because they did not know what to do in a flood event and so did not deploy their measures in time. The ingress was caused by the operation itself; the PLP measures themselves had worked well.”

Braunton (North Devon)

“One property was flooded because a pump that was meant to be supplied was not.”

Braunton (North Devon)
Assessing the benefits of property-level protection

Feedback on PLP performance during 2012 floods:

• For 3 out of 4 properties where PLP measures were deployed these reduced the impact of the flood event and had a positive impact.

• “Since that experience we have fitted the flood defences 3 more times which on all occasions have saved the property. This has saved £10,000 of damage each time.”
Assessing the benefits of property-level protection

Feedback on PLP performance during 2012 floods:

• But note……“some people had lost nuts and bolts etc to fit the barriers. Maintenance of the products was not great, rubber seals were a little weathered in places”.

• Some barriers have been left outside and have deteriorated - while rodents have chewed seals!

“We have received positive feedback from the district councillor and the local community. The scheme has worked effectively on three occasions since implementation. No properties flooded during these events.”

Waddingham, Lincolnshire - Environment Agency Project Manager
Not just the property - the person is key!

- Flood warning & emergency planning
- Maintenance, standards & social dynamics
- Technology

Diagram:
- R - Person
- S - Flood
- P - Property

Logos:
- JBA Consulting
- The University of Manchester
- Manchester Metropolitan University
- National Flood Forum
- Turnstone Forum
Evidence and belief - 2012 floods: PLP in action!

Dry feet - but prepared with wellies!

Redundant wheelie bins!
Defra Best Practice Guide

Annual independent inspections and re-issue of Flood Risk Report certificates

Community flood plan updated to reflect measures provided.

Emergency plans tested annually.

Residents provide Flood Risk Report to insurers.

Residents enter warranty and maintenance agreements.

Issue of Flood Risk Report

Independent post-installation inspections, wet test and sign-off

Homeowner product training & handover of instructions

Installation of Kitemark approved products

Procurement: installer appointed

Appraisal of eligibility and all sources of risk

Inception meeting with residents to raise awareness

Sign-up and early communication

Surveyor appointed

Independent survey and homeowner reports

Surveyor provides Bill of Quantities

Surgery with residents to discuss recommendations

Product selection

Issue (and return) of residents agreements

Consider upgrade options / contributions
Developments in PLP - links

- Link to SMARTeST, the ‘Six steps to flood resilience’
- NFF – Blue Pages;
- Property Protection Advisor on NFF website.
- Defra Best Practice Guide; Pilot Review;
- E-Learning module
Developments in Property Level Protection

• Encourage wider take-up of cost-effective property level flood protection – **resistance and resilience**.

• Enabling and empowering local action.

• Develop competency and training framework for PLP surveyors.

• Gain wider sector buy-in and support.

• Increase survey quality to provide assurance to **property owners** and **insurers**.
Evidence and belief - 2012 floods: PLP in action!

- Providing cost effective options to manage flood risk.
- Appraise all options and all sources.
- Effective community engagement.
- Manage expectations.
- Helping to minimise damage, not preventing flooding.
- Better than Sandbags or “Do Nothing”.
Overall aim.....increased flood resilience

Less of this...

More of this.....