



**JBA**  
consulting

**Developments in  
Property Level Protection –  
APSE, Oxford – 17<sup>th</sup> July 2014**

**Peter May - JBA Consulting**

# Assessing the benefits of property-level protection...

***“Storms and flooding: Insurance claims hit £426m, says ABI”***  
BBC News – 28<sup>th</sup> 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

➤ **H E L P !**

➤ **V. S C A R E D**

➤ **S C A R E D**

**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



# Do Nothing...

## Flooded homes – damage and stress!



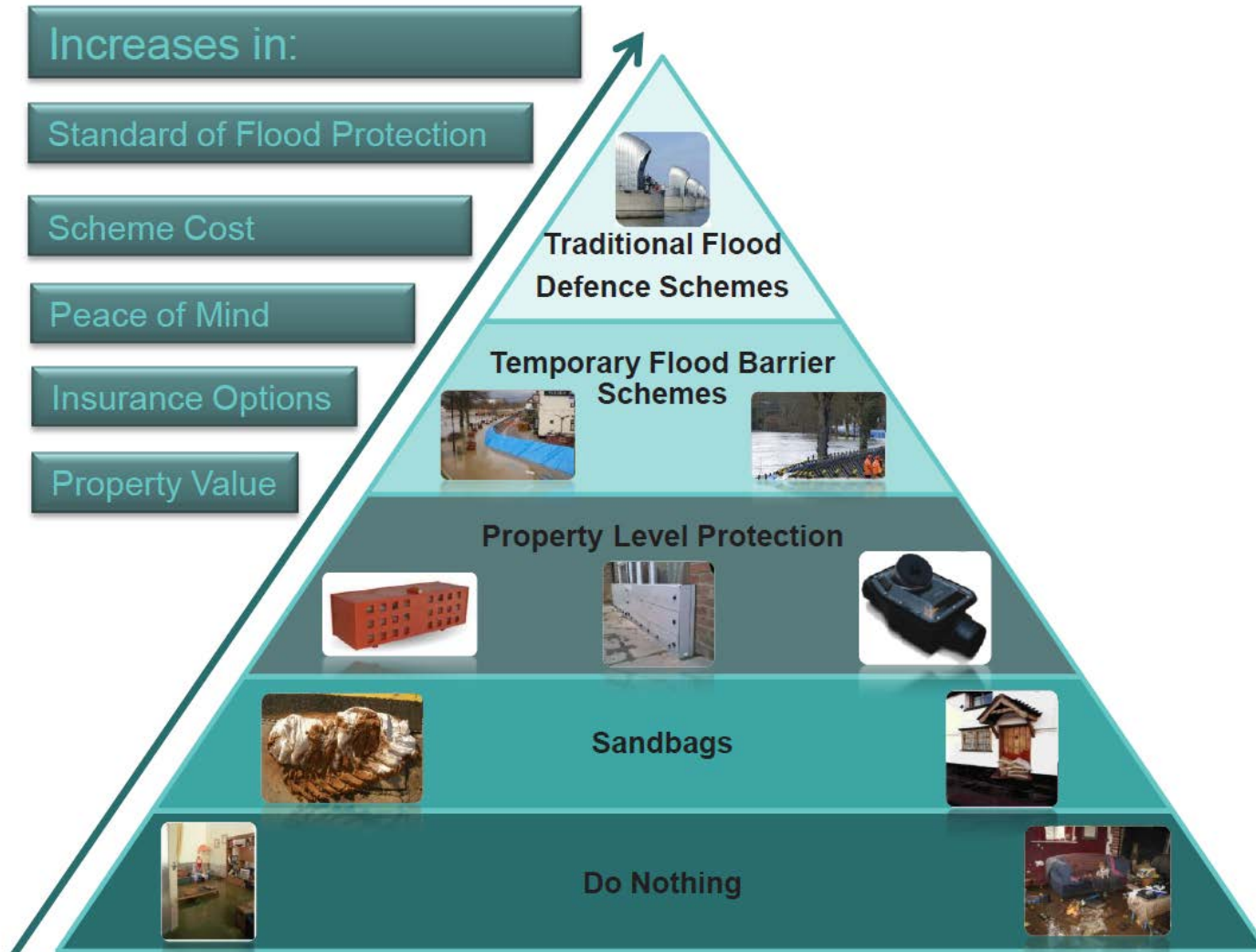


# The need for property-level protection...

Imagine this is *YOUR* home  
.....what would you do?



# Flood Protection Hierarchy –gap plugged!



# 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

## Manual Measures



Door and window barriers



Patio door barriers

## Automatic Measures



Automatic airbricks



Full port  
non-return  
valves



Flood doors

## 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





## 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

## 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



## 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**

## Successfully:

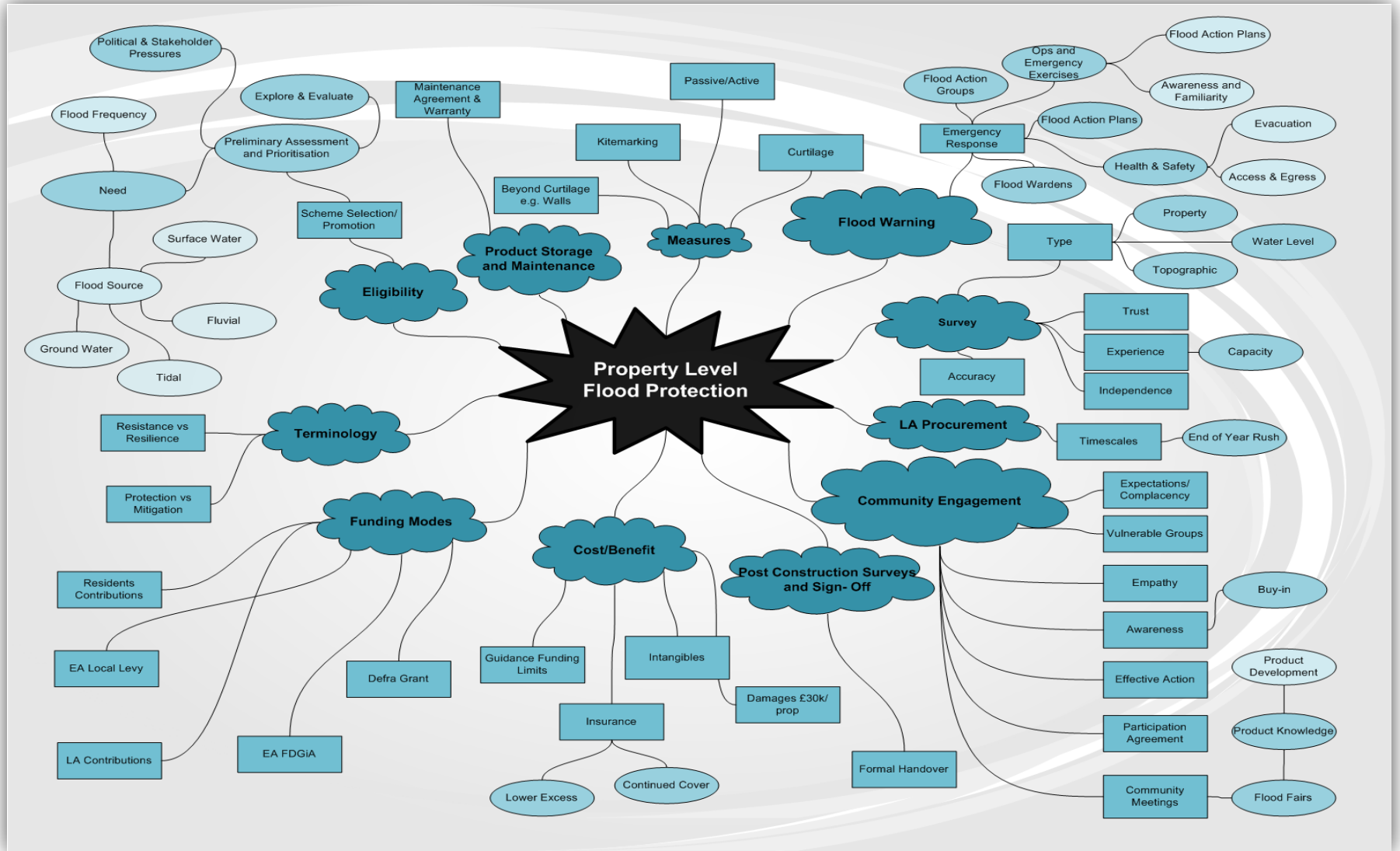
- Created demonstration areas promoting benefits and encouraging further take-up.
- Stimulated the supply of high quality flood risk surveys by competent and independent surveyors.
- Encouraged the development of new and innovative flood protection measures.

## PLP in action

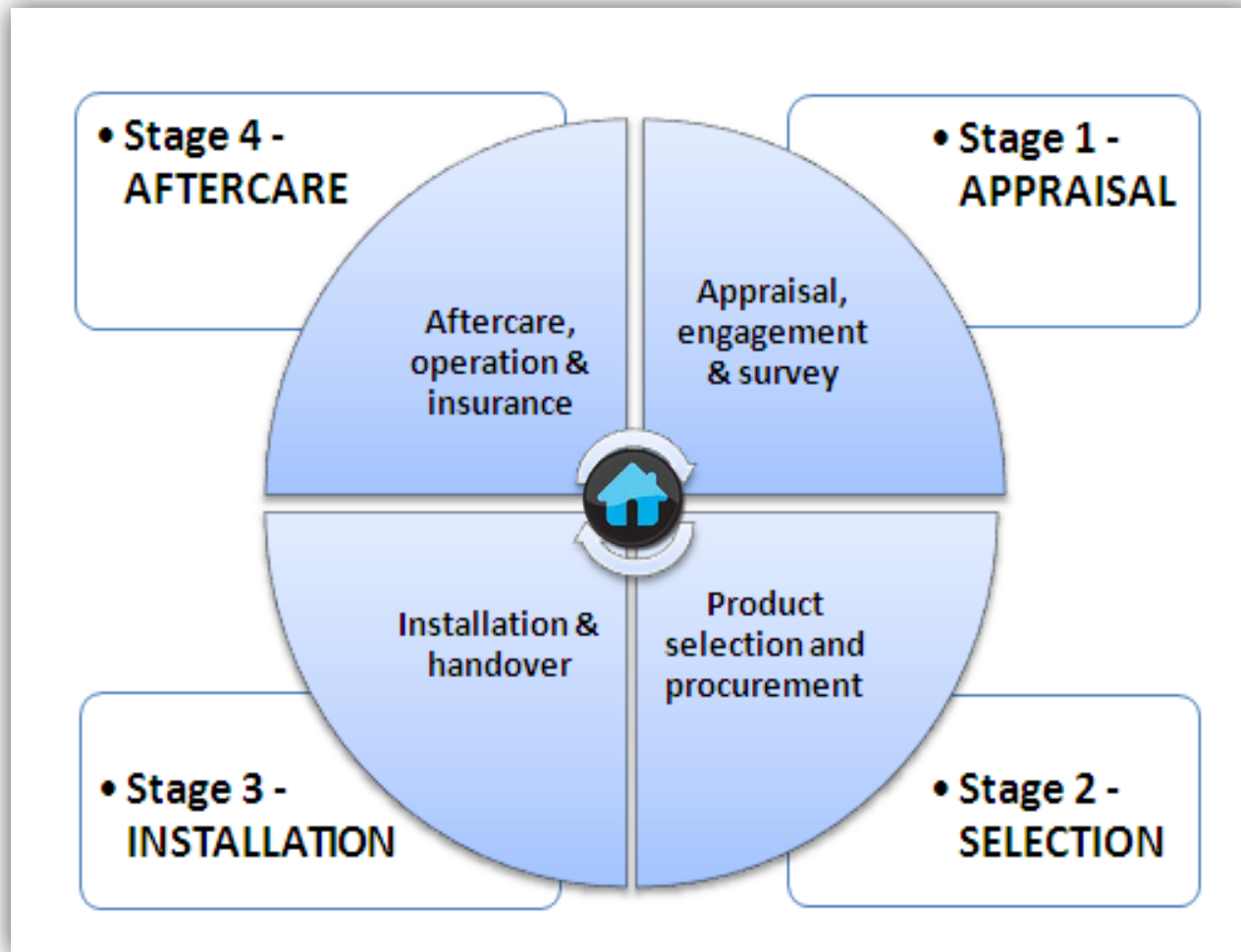


- But awareness of PLP remains low
- **PROPERTY PROTECTION ADVISOR** aims to raise awareness and encourage effective action

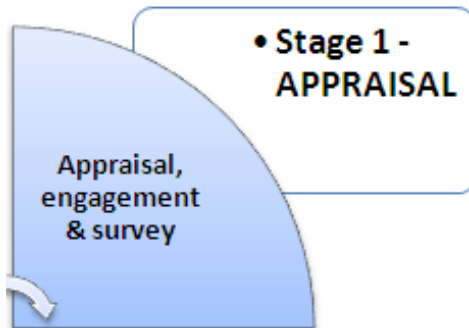
# Plenty to consider – but rest assured.....



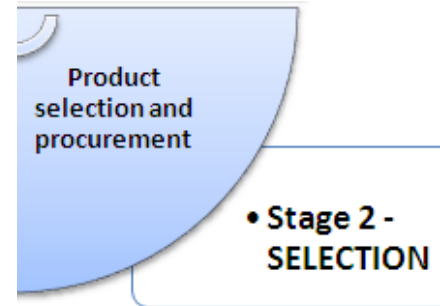
# Property level protection - a Four Stage Approach



# PLP Grant Scheme evaluation findings....



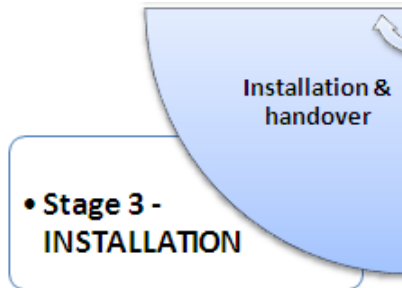
- **Effective engagement with residents critical for success**
- **Raising awareness and gaining buy-in**
- **Property surveys to be independent from suppliers**
- **Homeowner's report:** flood risk assessment; flood history; threshold level, recommendations



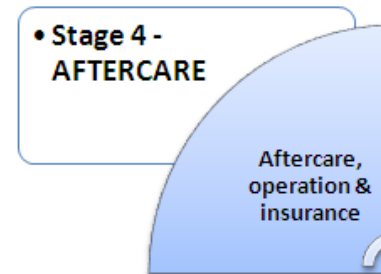
- **Excellent products available, including automatic measures.**
- **Homeowners prefer a choice of products**
- **Need impartial advice on measures suitable for property and person**
- **Right product for the person**



# 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.....

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- “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**

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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”.....***

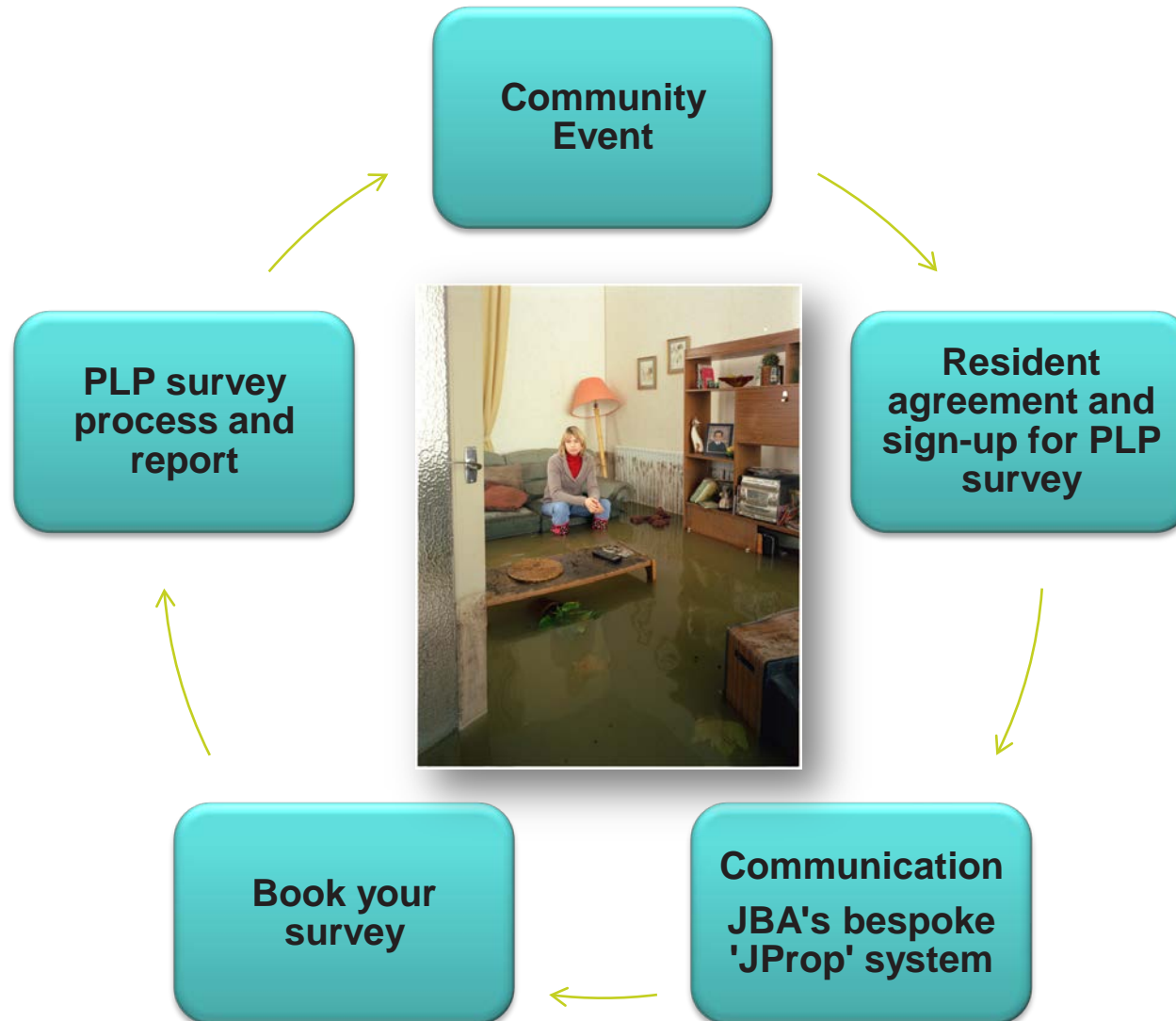
Highlighting the need for:

- Local Flood Group;
- Barrier Buddies;
- Flood Wardens; and
- Emergency plans

## 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



# 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

## PLP Survey Process

- 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



**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	TA24 8HY
Phone Number	01643 862201
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



### The Background

The flood risk posed to properties located in the Porlock to Minehead region has been identified by the Environment Agency (EA) and detailed in the West Somerset Catchment Flood Management Plan produced in June 2012. This shows that Horner lies below the 10m contour within the Horner Water Valley. This area has been highlighted as an area at risk from flooding which occurs on roads and to isolated properties as a result of river flooding. Rapidly draining water from steep hills causing surface water flooding has also been highlighted as an issue.

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

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

The survey was restricted to such locations as were reasonably apparent by inspection from the street from both inside and outside the property. No excavations were made to try to identify entry points.

### You should be aware:

It should be remembered that it is not possible to completely stop flooding; any PLP measures are designed to mitigate flood risk and reduce the adverse consequences and any flood plans should still address any remaining flood risk and also recognise such risk can be overtopped by a bigger flood event.

It is important that you prepare your own individual flood plan and consider appropriate measures in advance to reduce the impact of flooding. This will help you to be prepared to react quickly following a flood event. Resilience measures are explained further in section 10 of this report. Please also refer to the Environment Agency website for further information.

[www.environment-agency.gov.uk/homeandleisure/floods/31644.aspx#](http://www.environment-agency.gov.uk/homeandleisure/floods/31644.aspx#)

### Survey Information

The outline of the property which has been annotated with the main survey data is shown in red. The table beneath shows the results of a topographic threshold level survey, displayed in m AOD (metres Above Ordnance Datum).



Location	Height (m AOD)
Ground level	65.99
Front door threshold	65.72

# Stage 2 – Product Selection and Procurement

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## 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!



Wallington Village Community Association  
Registered Charity No. 1038479

## Flood Emergency Plan



1. INTRODUCTION	p.3
2. FLOOD WARNINGS	p.6
3. LEVELS OF RESPONSE	p.7
4. ORGANISATIONS INVOLVED	p.7
5. WHO DOES WHAT	p.8
6. SELF SUPPORT NETWORK	p.11
7. SANDBAG/FLOODSAX PROVISION	p.11
8. CONTACTS AND COMMUNICATION LINKS	p.12

Action Guides – What to do before/during/after Flooding p.14

Appendix: Contact Numbers p.18  
Insert Flood protection Products and Services

Produced with the assistance of Fareham Borough Council  
and the Environment Agency.

August 2011

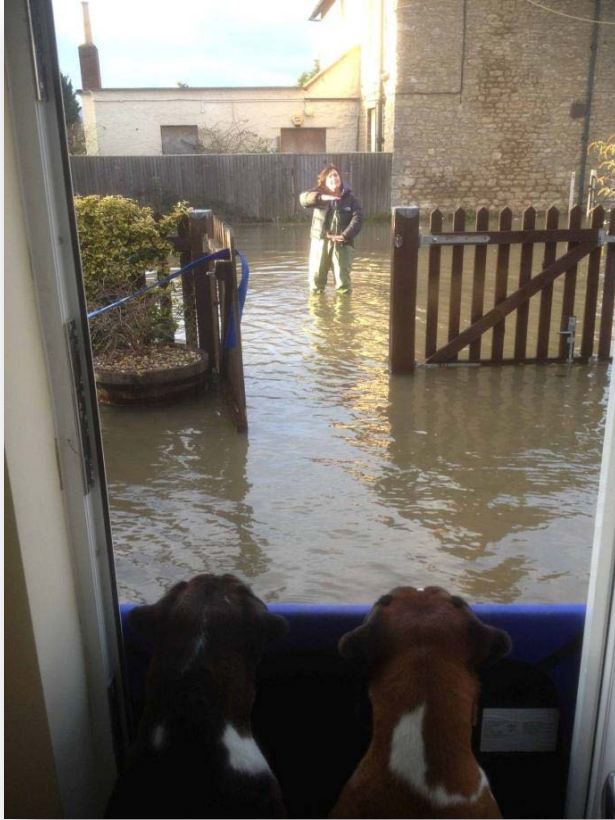
# Stage 4 – Aftercare, Operation and Insurance

## 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!



## 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)*



## 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.”*
-

## 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!***

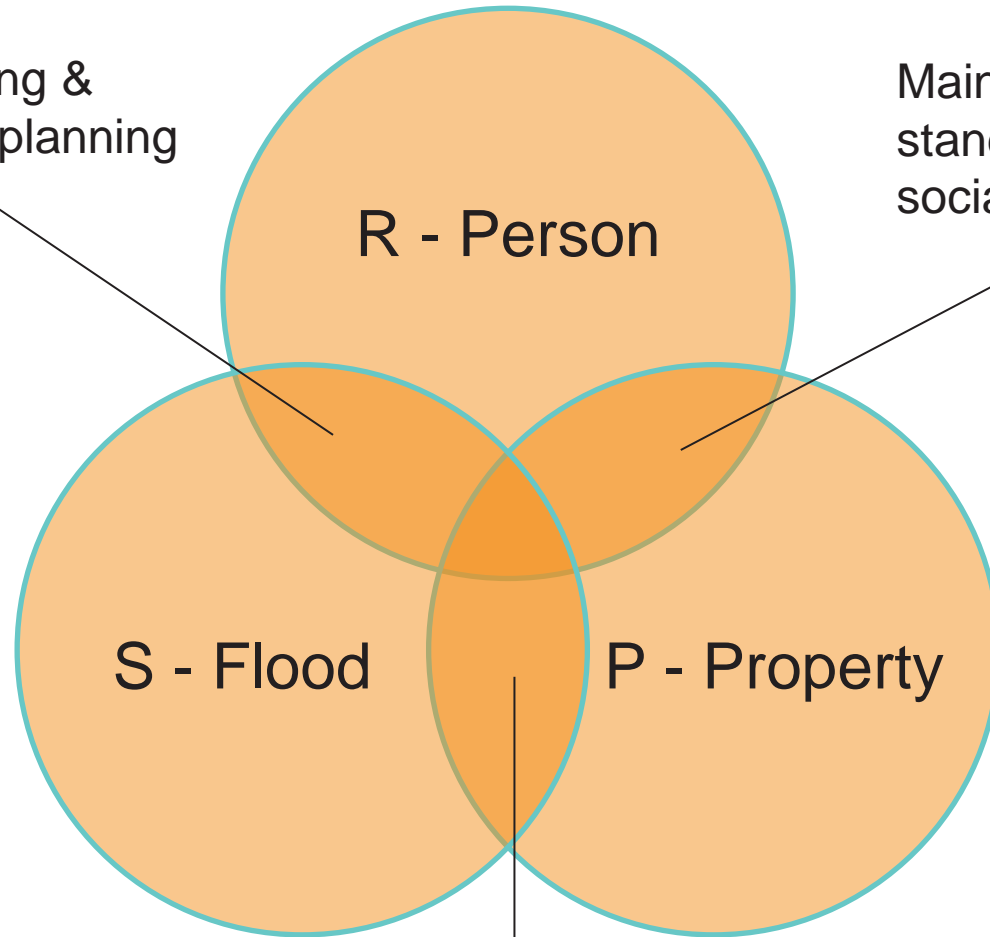
**“We have received positive feedback from the district councillor and the local community. The scheme has worked effectively on three occasions since implementation. No properties flooded during these events.”**

*Waddingham, Lincolnshire - Environment Agency Project Manager*

# Not just the property - the person is key!

Flood warning & emergency planning

Maintenance, standards & social dynamics

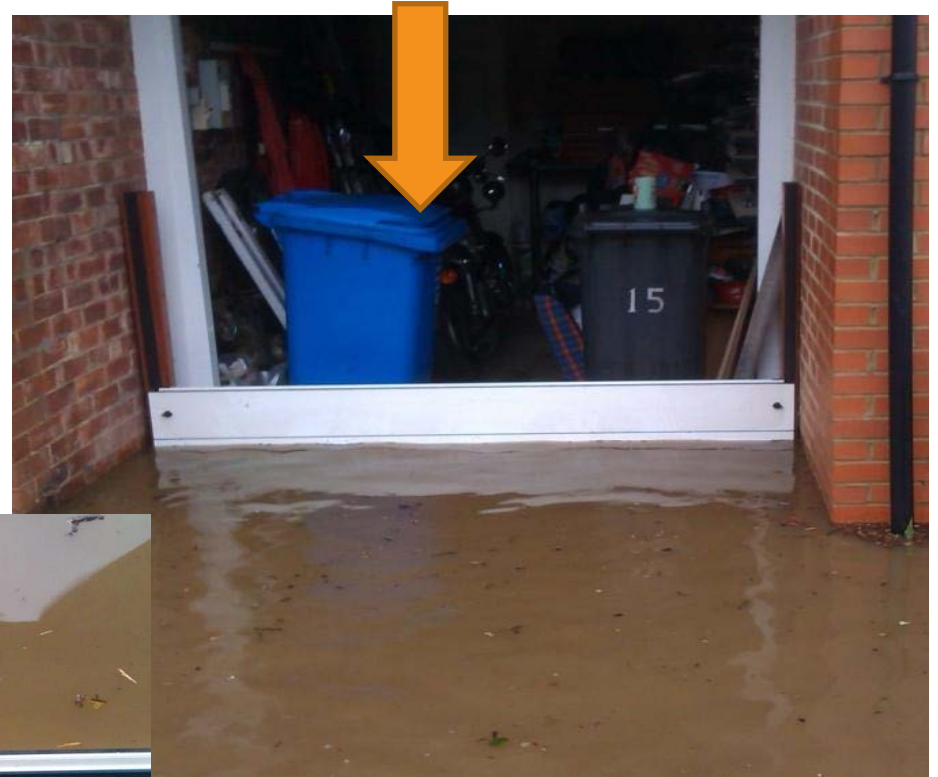


Technology

# Evidence and belief - 2012 floods: PLP in action!



Redundant wheelie bins!



Dry feet - but prepared with wellies!

# Defra Best Practice Guide



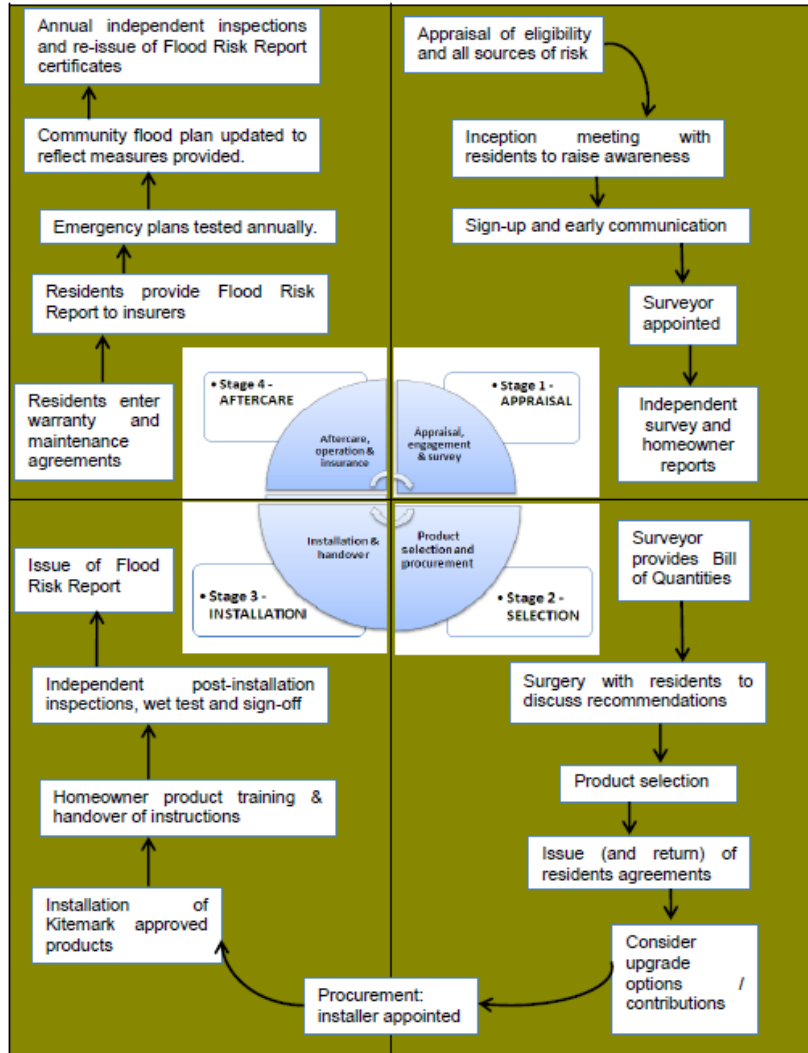
Walsgrave Village Community Association  
Flood Emergency Plan

1. INTRODUCTION p.3
2. FLOOD WARNINGS p.6
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Appendix: Contact Numbers p.18  
Insert: Flood protection Products and Services

Produced with the assistance of Farnham Borough Council and the Environment Agency  
August 2011



Property Level Flood Protection  
Survey Summary and Recommended Works

1. General Details	
Property Address & Number:	104/1000
Name:	Deegan & Sally Deegan
Address:	104/1000 West
Post Code:	W14 9BT
Phone Number:	01494 80233
Local Authority (Lead Local Flood Authority):	Wiltshire Council
Type of Property:	Terraced
Owner / Tenant Occupied:	Tenanted
Length of Time at Property:	18 years
Special Needs:	None
How are the grounds around affected by flooding?	Grassed / Soil
Is the property level?	Yes - Level 0
Is the Property linked to Groundwater?	No
Local Flood Community Group:	Yes
Flood Protection Survey Date:	13/05/2011 11:30:00



# 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



 Department for Environment Food & Rural Affairs

[www.gov.uk/defra](http://www.gov.uk/defra)

**Best Practice in Property Level Protection Systems**

**Advice for Local Authorities**

Date: May 2014

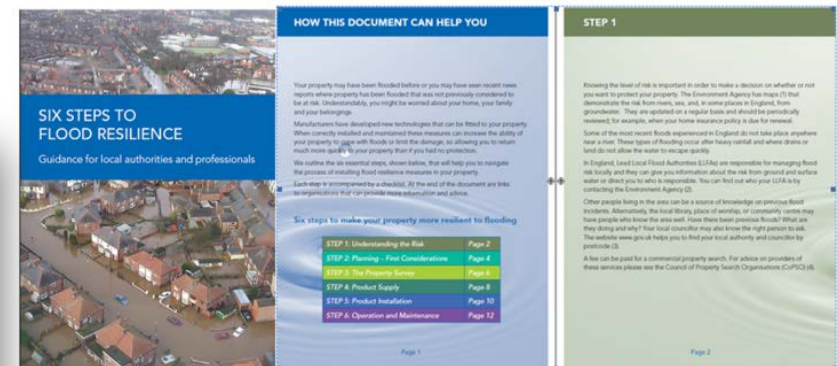


Figure 12: Sample pages from Six Steps to Flood Resilience documents

# 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”.

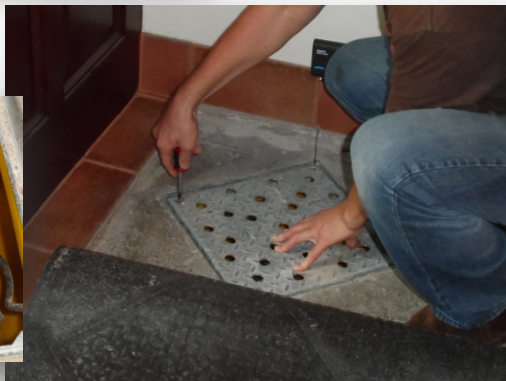


# Overall aim....increased flood resilience

Less of this...



More of this.....





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**Peter May**

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