


Understanding Property with PCA Flood Recovery


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CONFERENCE IN TRAINING IN ARCHITECTURAL CONSERVATION




Introduction

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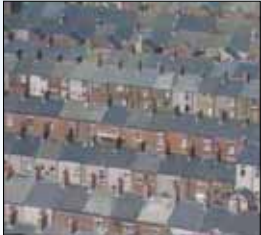
This presentation will examine the process of flood recovery set out in the PCA Code of Practice

- Post flood investigations
- Repair strategies
- Recognising and avoiding problems
- Designing in flood resilience
- PCA - Code of Practice
- Questions & Answers




PCA Activities


Professional **advice and help** to ensure a safe, cost-effective remedy **for problems in buildings:**



- Water Ingress & Condensation
- Flood Recovery
- Floor Resistance and Resilience
- Damp & Timber decay
- Structural Damage
- Invasive weeds (Japanese knotweed)
- Underground Waterproofing




Code of Practice



WHY DID WE BOTHER??



PCA code of practice provides practical guidance for the effective recovery of flood affected buildings.




Recovering a flooded building

The first step in the recovery process is to understand what you are dealing with.

It is essential that you ask the following questions:






- Do you understand the building?
- Is the structure OK?
- Has there been Contamination?
- Where can water be trapped?
- Are there any underlying defects?



Understanding the building

How is it built and what with?






How long has floodwater been in the building, where did it go?

Specialist practitioners must understand:-

- the **problems**
- the **possibilities** and
- the **pitfalls**

BEFORE - any actions are implemented !





Damp houses flood!



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Understanding the building



Importance of latent defects

It is important to establish if defects pre-date the flood. These need to be quantified and addressed!

Failure to do this will inevitably lead to failures in the repair and disputes often follow.

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Understanding the building

Water affects materials in a variety of ways

Concrete + brick is very resilient to water damage, Gypsum based products fail quickly.

Timber can be resistant to short term wetting but decays when it remains wet.

Dense materials retain little water but dry slowly whereas porous materials can retain large amounts of water but can often be dried quickly.





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Diagnosis and Investigation

The best plans for remediation are based on a good understanding of the problems – the specialist must therefore:-

- Research
- Communicate
- Open up
- Sample
- Measure
- Observe
- Record

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Diagnosis and Investigation

Water Monitoring

Establish baseline

- Conductivity meters
- Speedy meters
- Atmospheric sampling RH/ vapour pressures
- Gravimetric testing

Refer to -BRE Digest 245
Test for salt contamination

Monitor

- data loggers
- timber plugs
- revisits + repeat tests and record



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Recovery Strategies



Drying the building

Drying requires – ENERGY

The speed of drying will be dictated by how much energy is introduced and how this is then managed.

Some things don't dry.

Others dry...
... and then seem to get wet again!

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Recovery Strategies

What is Dry?



When is it 'safe' to reinstate?



Recovery Strategies




When you say it is!



Recovery Strategies

The repair is dictated by the amount of free water that remains in the building, levels of salt contamination, and the materials and techniques that are adopted in the repair.

A "Drying Certificate" is not a licence to undertake a thoughtless restoration!



Longer Term Effects of Flooding

Post Repair – defects!


- Damp staining
- Shrinkage
- Salt deposition
- Laminating finishes
- Unpleasant odours
- Mould growth
- Fungal decay in timbers





Longer Term Effects of Flooding

Avoid these problems by:

Carrying out repairs to the building that take account of the condition and design of the building.



It is perfectly possible to create a dry room when the structure is saturated below ground so recovering wet buildings should be simple!





Flood Resilient Repair

Government has responded to past floods in a number of ways:-

- Re-examine standards – PAS 64 BSI / CIRIA
- Set up working groups into flood property level flood resilience- DEFRA
- Established Flood forecast centre- EA
- Supported NFF with cash and patronage
- Established - FloodRe

The message is: **"IT WILL HAPPEN AGAIN"**

Flood Resilient Repair

A number of standard measures can be considered in isolation or in combination.

- Flood gates and air brick covers
- Hard renders – inside and out
- Waterproof fittings and fixtures
- Raised services
- Non return valves on drains



What else is possible?

- Water management systems – Internal
- Revise openings
- Channels, sumps, pumps
- Cavity drain systems
- Easily renewable wall linings
- Elimination of voids
- Sacrificial / resilient spaces



BEWARE !

Flood resilience measures may impact upon the structure in ways that may not be immediately apparent.



Summary

When recovering a flood affected building it is important to remember the importance of:-

- Specialist knowledge applied to flood recovery
- Undertaking thorough post flood investigations
- Recognising and avoiding pitfalls
- A robust and flexible repair strategy
- Consider flood resilient options.



Further information:
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