



National  
Trust

Case Study

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## Burst pipes

Flood water ingress  
due to burst pipes  
January 2011



# Background

At 10am on 31 December, 2010, staff were alerted to a default setting on the fire detection system at The Argory.

A burst pipe in the attics had flooded directly into the Archive room and Tommy's bedroom on the first floor. It continued down into the Study and right through to the underlying basement. The flood was caused by a burst pipe in the Garrets, where a mains water pipe feeding the toilets within the Mansion had burst in the thaw. A substantial amount of water fell in a short period. It took three days to sort and treat all the affected objects (directing people, setting up work stations, separating dry, damp and wet objects) before an assessment could be made of the damage.



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# Impact

Affected items included furniture, bed linens, photographs, books, correspondence and legal documents, curtains, carpets and underfelt. The fabric of the building has also suffered from the flooding and subsequent drying.

The Archipress was delivered by Castle Ward staff, and the very wet hardback books were isolated by vacuum packing. The rest were slowly dried out. The property was unable, however, to source much needed de-humidifiers, fans etc, due to the holiday period. Northern Ireland had also experienced the highest incidence of flooding in commercial and private properties, meaning that dehumidifiers were extremely difficult to source.

The most badly affected objects were the contents of three archive boxes, with roughly 25 Kodak cases, all containing at least 20 cardboard slide negatives. Each box was filled with water, and the Kodak cases were too saturated to open without causing more damage. They were placed on blotting paper and rotated every few hours to enable access to the negatives inside.

Furniture and carpets were also badly affected.

Photographs were taken and the Trust insurers were contacted. The property team responded superbly, the Conservator, Curator, CSM and Regional Director also came to support and help dry the carpets.

The textiles and carpets were correctly treated, and the only damage was some red staining from the quilt on two (non-indigenous) bed sheets on Tommy's bed.

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# Response

**Bottom left The source of the flood**

**Bottom right December 2010, the coldest month for 120 years**

The emergency response was enacted; despite extreme weather conditions over 40 Mid-Ulster staff and volunteers responded and arrived promptly to salvage all objects from the affected rooms. The Trust Conservator and other members of the consultancy arrived within two hours to assist with the salvage plan.

Thanks to the rapid response, damage to the collections was limited. Only a few items needed studio treatment, which limited the exposure of our insurers and helped strengthen the relationship.

By the end of the first day, a debrief had taken place whereby the Consultancy advised the property staff on the next steps to take. The necessary specialist equipment (Archipress and salvage materials) was identified, and individuals were tasked with sourcing it.

Rotas were maintained and staff continued to sort salvaged objects over the following weeks. Conservation advisors were contacted by the Conservator to ask for advice. Many Conservation Specialists also visited the site in the following six months.



# Cost

- Conservation of collection 65%
- Specialist and salvage equipment and materials 10%
- Building works 25%
- **Total: approx. £100,000 (this does not include the cost of staff time)**

Below **Immediate response**

Top right **Water penetrating the study ceiling**

Bottom right **Using absorbent materials on the carpets**



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# Review

## Lessons learnt

■ Everything was salvageable. During the first year furniture was conserved in front of the public. It took two years to conserve the ceilings to ensure that they were properly dried out.

■ During the warmer weather an outbreak of mould appeared in the Archive room. This was assessed using Agar strips and a mould sampler and treated accordingly. This illustrates the importance of using dehumidifiers and cold air fans rather than conservation heating to dry out flooded building fabric/materials.

■ It is important to identify an individual whose sole purpose it is to photograph the incident.

■ Three rooms were affected by the flood, resulting in all their contents being housed in three further rooms.

■ Do not underestimate how long it takes the fabric of a building to dry out. Ongoing protimeter readings of affected walls are being recorded as the drying out process continues.

■ The affected rooms were available for viewing by the public during 2013.

■ A lot of energy was put into interpreting the flood, for example, engaging with the visitor on the guided tour and so on. Feedback showed that the public was not that interested. There may have been a better way to have engaged with the public than this.

■ It is important to decide how and when to involve the media.



■ There were opportunities created: The recruitment of MA Museum Studies students as volunteers to help with the proposed archive project. To inventory, catalogue, photograph, condition check and re-house the archive collection, in front of visitors during open season 2012.

## Associated works

- The incident reinforced the importance of:
  - Identifying water tanks in disuse and ensuring they are empty
  - Mapping and locating stopcocks and other sources of water

## Recommendations

■ Carry out dry run exercises and revise emergency procedures regularly.

■ Buy de-humidifiers, so that they are readily available and share with neighbouring properties.

## Further information

### Contact

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### Case study information

This case study was compiled by Ingrid Chesher with assistance from Claire Magill, Elizabeth Long and Katy Lithgow.

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Above **The Study**: Underfelt removed, cold fans installed and the carpets propped on crates and pipes

On the cover **The Archipress machine**: Drying out books