



## Loss Bulletin: Modern Methods of Construction

### Introduction

<b>Industry:</b>	Sheltered Housing Flats
<b>Source of Incident:</b>	Small Fire
<b>Potential Loss:</b>	TBC – Excessive repair costs from minor incident
<b>Extent of damage:</b>	Fire quickly extinguished by sprinklers which caused water ingress into the structure. Method of construction resulted in significant costs, lengthy reinstatement times due to dismantling of the structure to remove water
<b>Cause of Incident:</b>	Ingress of water into modular and non-resistant construction

### Background Information

Sheltered housing flats consisting of two storey balcony access blocks and a maintenance building. The building is constructed of prefabricated pods which are supplied and assembled on site. Whilst these modular buildings are quick to assemble and cheap to manufacture, they lack sufficient fire protection and complications can arise from relatively simple damage from escape of water.

A 1<sup>st</sup> floor flat suffered a small fire which was detected and hence successfully extinguished by sprinklers. The fire-fighting water flooded the flat and penetrated the intermediate floor into the ground floor flat. The resulting contractor investigation revealed that the flooring structure was not water resistant and that the water had penetrated all layers including wetting the gypsum and mineral wool insulation.

### The Issues

Wet gypsum board does not have the same load bearing capacity as dry gypsum board even after the boards have been dried. Endoscope investigation showed black spots in the gypsum board showing that fast mould growth can be expected. To repair the building, the structure needed dismantling and gypsum board/mineral wool needed to be replaced.

As the building is prefabricated, replacing the gypsum board and mineral wool is only possible through dismantling the floor entirely, leading to concerns over the structural loads on the remaining structure. The entire building may require dismantling which is disproportionately expensive given the amount of damage that has occurred. This is true for all buildings constructed using modern modular methods and damage from escape of water is difficult to trace, costly and requires a significant amount of time to reinstate.

## Lessons Learnt & issues for consideration

- Once constructed it is difficult to identify buildings constructed using modern methods of construction, as they are often clad with brick slips or similar materials.
- Modular buildings/modern methods of construction can be low-cost to construct, but can result in excessively high costs for repair and extensive reinstatement times
- Hidden voids are rife within these buildings and can permit rapid spread of fire and water
- Water damage can cause structural weaknesses and hidden mould growth
- 'Escape of Water' is one of the most frequent types of property damage losses, yet buildings of this type are particularly vulnerable
- Ensure you advise Protector and repair/maintenance contractors of any buildings constructed using Modern Methods of Construction
- The sprinkler system saved the building from being destroyed by fire

Further information and guidance on this subject is available from:

- The Health and Safety Executive - <https://www.hse.gov.uk/>
- The Fire Protection Association - <https://www.thefpa.co.uk/>
- Other trade bodies



**For clarification or further information please contact –**

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