



## Acknowledgement

This leaflet was originally prepared by Steve Emery, Fire Safety Advisor for English Heritage and has been reproduced with their kind permission. It has been updated by West Yorkshire Fire and Rescue Service.

## Introduction

The definition of 'emergency' is the subject of continued debate, with one side considering a small leak of water dripping onto a priceless painting an emergency, while others would consider it just an 'incident'. There is no reason why the risk assessment used for emergency planning should not embrace these types of incident it just means that the response does not need to be so involved. Emergency Planning assumes that an emergency is unavoidable, which is a sensible assumption as it gives urgency to putting a workable plan in place 'just in case'. This plan should detail the contingencies to cope with most situations. However, the fact that an emergency has occurred should be regarded as a failure of preventative measures.

## Emergency Planning

Prevention is obviously better than cure and in terms of emergencies, is commonly known as Emergency Planning. An emergency plan varies in its scope and detail according to the size and complexity of the premises. In large premises, museums, art galleries and houses containing collections, it should be a comprehensive manual covering everything including;

- routine preventative measures
- housekeeping action
- fire safety measures
- risk assessments
- emergency procedures
- contact and facilities lists
- Prioritised salvage plan
- Managing a salvage squad
- Business continuity planning

## Compiling the Plan

Site staff and management will be the best people to compile an emergency plan, as they will already have an idea of the hazards and threats to the building and the value of its contents. They will know that the hidden valley on the roof will leak after a snow storm, or leaves will block the gullies in the autumn. They will also know where the concentrations of combustibles are kept and when too much stock is delivered and where it is stored temporarily. The advantage of producing an in house plan is that it can easily be updated. In fact it should be continuously reviewed, perhaps quarterly or when new collections arrive, so that it is never 'signed 'off and filed.

The plan should be easy to understand and should be accessible to any authorised person who needs to use it. The sections devoted to emergency actions such as contact lists, salvage priorities etc may need to be read in adverse conditions, so this should be in large print and preferably encapsulated so that they are not unreadable when they get wet. Diagrams, plans and pictures are a concise way to convey messages.

## Threats to Consider

Fire and flood are probably the two biggest threats, but security should not be forgotten, both as a preventative measure and during salvage operations.



**Under Floor Void**



**Basement High Fire Load & Access Problems**

## **Other Fire Hazards**

Whenever there are contractors on site, for whatever reason, from catering for an event to displaying a new collection or where building works are taking place there will be additional hazards. A new risk assessment should be undertaken to address each situation.

### **Catering**

Where caterers are used for events the contract should be clear about what operations can and cannot be carried out, what areas can be used and who has the authority (preferably site staff) to make sure that the conditions of contract are being adhered to. Menus should be agreed to in advance so that additional hazards such as deep fat frying or the use of blowtorches can be anticipated. Additional safeguards can then be put into place, or if necessary the menu can be changed to eliminate the hazard. By making these conditions clear in advance, problems arising in the middle of an event can be avoided.

### **Building Works**

The additional threats which building works pose can include:-

- Loss of fire separation caused by the removal of doors or repair of partitions or ceilings.
- Temporary isolation of fire detectors to avoid false alarms caused by dust.
- Additional fire loading caused by the temporary storage of building materials and packaging.
- Additional sources of ignition caused by temporary lighting, plumbing works, sparks from cutting gear, burning paint and lead burning. These ignition sources should be controlled by a system of Hot Work Permits, or better still banning hot work altogether.
- Poor water supplies because hydrants have been covered or have not yet been fitted.
- Poor fire service access because of temporary hoarding or site huts.

### **Will the Building Survive a Fire?**

One way of determining the likely effect of fire on a building and its contents is to use the 'Building Fire Performance Evaluation Methodology', otherwise known as the 'Method'. This involves looking for the room that seems to be the highest fire risk.

#### Fire in the room of origin

It is then assumed that a fire occurs which has enough energy to spread and involve the whole room (flashover). Whether this occurs or whether it just burns out will depend on the amount of combustibles, how close they are to each other, the available ventilation, the volume of the room and

## Remedial action and listed buildings

There will probably be a whole range of possible actions to take to improve the building fire performance. Not all of them may be possible because of listed building constraints, cost or desirability. The following questions may help decide on which course of action to take;

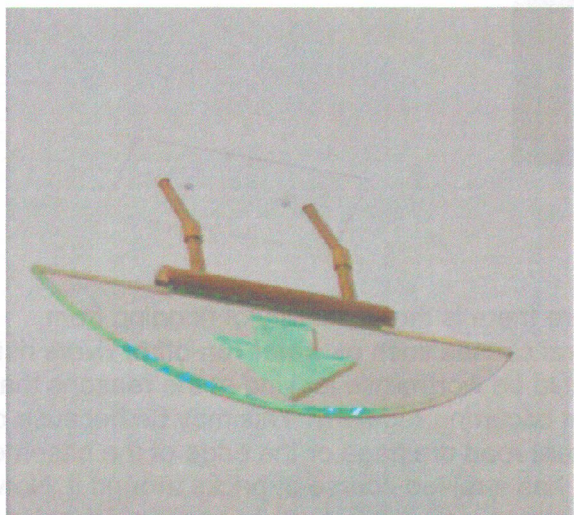
- What factors have been identified as the biggest threats to the building and contents?
- Can these threats be reduced to an acceptable level that does not involve any upgrading, such as reducing the fire load, or changing the use of the building or parts of the building.
- If improvements are necessary, are they reversible, sympathetic to the appearance of the building and avoid damage to the historic fabric?
- Will the improvements be effective? For instance, the provision of a fire alarm and detection system, which is not monitored, will not provide any protection when the building is unoccupied.
- The provision of an automatic detection system may cut down the time before a fire is discovered, but is it reduced sufficiently so that it is unlikely that fire will spread to adjoining spaces. If not, another layer of improvements, such as a sprinkler system or local water mist system may be necessary.
- Will the improvements be affordable and if not is there a more cost-effective alternative?



Heat & Smoke Damage - Top of Room



Salvaged Items on Lawns



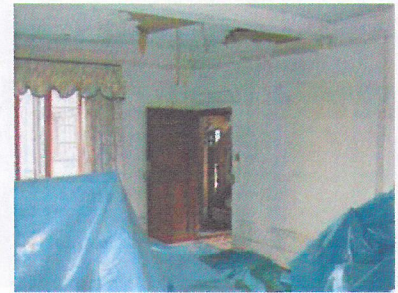
Sympathetic Exit Sign

## Fire Fighting Run-Off Water

Fire services try to cause as little water damage as possible when fighting fires, but at serious high level incidents the water from their hoses will pour into the rooms below. A large fire may typically require the use of 6 jets, each discharging over 500 litres per minute. The hydraulic platform may well discharge 1800 litres a minute. This is a total of 4.8 tonnes of contaminated water a minute. The weight of water may well cause further structural damage and will certainly cause debris to cascade onto lower floors. It may be possible to cover objects to minimise water damage, but the best course of action would be to divert as much as possible to the outside, using waterproof sheets and hoppers if available.



**Debris Collapsing onto Lower Floors**



**Cover Objects to Prevent Water Damage**

Removal of objects before the water reaches them is another option, but relies on there being enough people and time to remove them safely. Collections of books are a particular problem because of the number and weight of them. If the collection is on upper floors a book chute may be required to get them to ground level quickly.

## **Salvage Plan**

An emergency plan should be drawn up and the plan should identify;

- The personnel responsible for salvage operations, including the Salvage officer and their deputy
- Site and building plans
- Salvage priorities
- Salvage procedures
- Emergency first aid conservation
- Further treatment procedures

## Training of the Salvage Teams

Salvage teams may need to enter a building which has suffered fire or other damage. They will only be allowed in those areas which the officer in charge of the fire service gives permission for.

This may be when;

- Fire is at high level, entry into rooms below may be possible.
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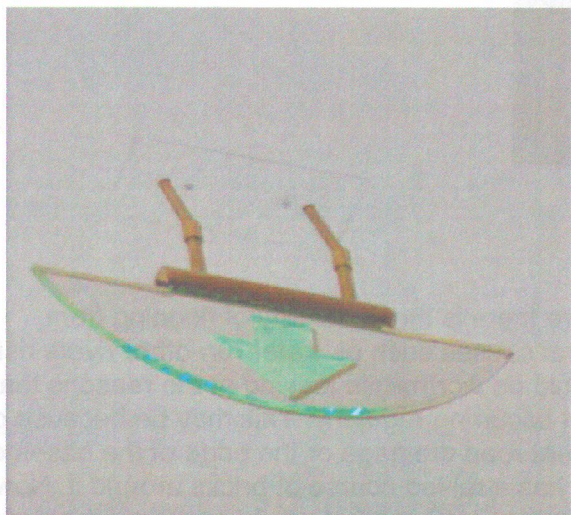
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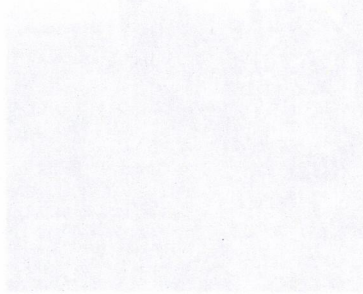
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## Salvage Priorities (Snatch Lists)

These salvage lists are best in the form of photographs of the items to be rescued, their position in the room and building and any special measures needed to remove them. This may be the manual handling requirements, removal techniques, or equipment required. Value of the exhibits should not be included for security reasons. A description of the object is sometimes more useful than the title. (See appendix A)

## Salvage Procedures

If a room is completely filled with items of similar value, it is still worth sorting them into an order of removal. This could perhaps be by order of rarity, historic significance, ownership, or simply ease of removal rather than simply giving them all a priority 1 rating.

The procedures for salvage will vary according to the scale of the incident, but it makes sense to plan for the worst case scenario and for removal of all the objects.

Points to consider are;-

- Contacts
- Specialist facilities
- Floor plans
- Key to floor plans
- Salvage information
- Procedures for removal of items
- Equipment
- Response equipment
- Composition of salvage teams
- Safe areas to store objects
- Arrangements for the longer term storage or treatment of objects
- Salvage store, fixed or mobile
- Maintenance of salvage equipment

## Security

The probability of arson attacks can be reduced with good security measures, but the difficulties of removing secure objects during salvage operations need consideration. In addition the movement and storage of valuables after removal requires a degree of pre-planning. The security of the salvage priority list and the information it contains should also be considered because it also needs to be accessible in emergencies.

## Testing and Monitoring

Once a plan is written, it must remain fit for purpose, so it needs to be tested, maintained and those likely to use the plan need to be familiar with it and should be adequately trained.

- Write the Plan – Be Flexible
- Undertake a Paper Exercise
- Update the Plan
- Full Scale exercise
- Update Plan

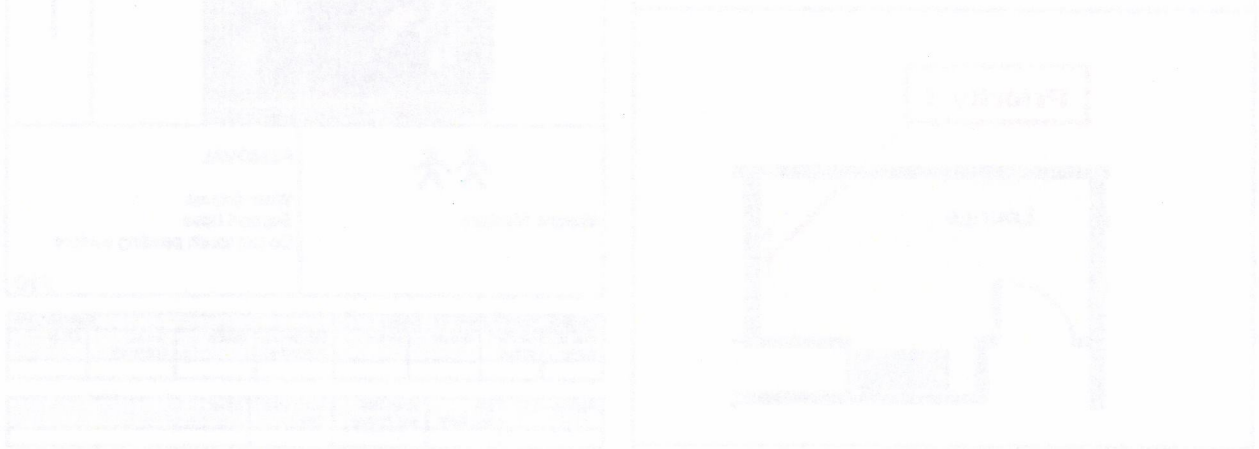
## Contacts

One of the most difficult items in the plan to keep up to date is the contact lists, both for management teams, members of salvage teams and equipment suppliers. Try contacting people on the lists at different times of the day, in the evenings, at weekends and other unusual times to see if the existing method of making contact is still efficient. When a disaster occurs the contacting of staff may take a long time and occupy the person who is first on the scene and has many tasks to perform. An alternative solution is to contract the task out to a third party, such as a call receiving centre. Part of the contract would involve the third party periodically checking the lists and making test calls.

The Order simplified, rationalized and consolidated fire safety legislation and it provides for a risk-based approach to fire safety allowing more efficient and effective enforcement by the fire and rescue service. See the website for the Department of Communities and Local Government for further details. At the core of the legislation lies the Fire Risk Assessment which has to be carried out as part of complying with the fire safety order. This is an organized appraisal of your work activities and the workplace to enable you to identify potential fire hazards, and to decide who (including employees and visitors) might be in danger in the event of fire, and their location. You will then evaluate the risks arising from the hazards and decide whether the existing fire precautions are adequate, or whether more needs to be done.

In general fire risk assessments in the case of a normal building is carried out by checking the compliance of the building to relevant fire safety guides, making assessing the risks a straight forward task.

English Heritage can be contacted to obtain an emergency plan template at [iep@english-heritage.org.uk](mailto:iep@english-heritage.org.uk)



Example of a template that is provided in case of an emergency (English Heritage)