

**The Implementation of a Damage Limitation Project
in a Heritage Context**

Stewart Kidd, Heritage Loss Prevention Consultant

A. Principles of Damage Limitation

1. Originally known as 'salvage', the concept of preparing for and planning to deal with the consequences of fires (or other untoward incidents) is now well established in the area of heritage management (*Heritage Under Fire* pp. 50-55). Building directly on the experiences of the fires at Hampton Court (1986), Uppark (1989) and Windsor Castle (*The Bailey Enquiry*) and the Hofburg (1992) there has been much interest in this approach in the UK and in particular, the National Trust for England has pioneered a number of useful techniques at Lanhydrock House, Cornwall (*Heritage Under Fire* pp. 101-104). Significant improvements in techniques and equipment have been developed (principally in the area of heritage management as a result of work undertaken in the National Trust for England, the National Library of Scotland and the activities of the UK Conservation Council. Interest outside the UK has been less obvious but as this paper will show, the Schönbrunn Palace in Vienna, Austria which set up a Damage Limitation Team in 2000/1 has taken major strides to rectify this shortfall.

2. The primary purposes of damage control are to:

- Minimise the impact of a fire by restricting the spread of smoke and heat;
- Reduce the loss suffered by the organisation by relocating vital or significant items of the contents of a building to a safe place;
- Recovering important records or other key documents;
- Minimising the impact of fire fighting activity by reducing the collateral damage caused by water;
- Protecting damaged buildings (against weather and intrusion) to prevent further loss or damage.

3. Skilful utilisation of even restricted resources can make a considerable impact on both the quantity and cost of fire damage and also ensure that an organisation can recover more quickly from the effects of the fire.

4. In modern commercial practice the utilisation of a damage control plan is an essential feature of business continuity planning. Some insurers will often insist on the existence of such plans before providing business interruption insurance coverage.

5. The application of a logical plan permits the best utilisation of available resources (for example: initial handling of key artefacts is undertaken by those familiar with them and trained in safe techniques) while other resources are mobilised in less sensitive or delicate activity (for example: evacuation of buildings).

B. Modifications to Present Emergency Plans

1 At the moment, in most premises without a DL Plan, staff action in dealing with a serious fire is restricted to the following:

- Calling the fire brigade;
- Evacuating the premises and assisting in the control of visitors;

- Preventing re-entry to evacuated premises and security of the Palace;
- Limited assistance to the fire brigade.

2. The introduction of a damage control plan requires a rethink to this approach and, in particular, will need an examination of the allocation of finite resources. The implications are, of course, very different for a fire which starts during the night or when the buildings are empty.

3. The duties to be undertaken in the context of the damage limitation plan will include:

- Calling the fire brigade;
- Evacuating nonessential personnel from the palace;
- Control and evacuation of visitors;
- 'First-aid' fire fighting (if appropriate);
- Providing technical assistance to the fire brigade on their arrival;
- Taking technical steps to restrict the spread of fire (doors, windows, ventilation systems etc.);
- Removal and relocation of priority items from the showrooms
- Limiting the impact of fire fighting activities;
- Smoke removal;
- Recovery of items after extinction of the fire

4. All of these tasks will require additional levels of training and commitment and it is essential for safety, liability and legal reasons that no member of staff is ever asked to undertake a task for which he or she has not been properly trained.

5. Notwithstanding the above, there can be no good reason why staff (other than those forming parts of the DLT should not be asked to assist in working in a non-fire location in the packing of artefacts and their removal from the Palace and relocation to a designated safe area.

C. Pre-fire Planning

1. It is necessary as a first step to identify and prioritise the contents of the historic building on the basis of their importance for removal and the ease with which the items may be removed.

It is recognised that this may be the most difficult part of the project as getting curators and conservators to decide which pieces of a collection are the most important are likely to find it difficult to respond.

In the case of the Schönbrunn Palace the following categories were used:

- First priority: - items of considerable heritage value which are intimately connected with the Palace or its previous occupants
- Second priority: - items which are important to explain the Hapsburg story, the development of the Palace or have a high intrinsic value.
- Third Priority: - items which would be difficult or expensive to replace and which contribute to the history of the Palace.
- Unclassified: - items which will be left in place.

2. Unclassified items be be so allocated not only for reasons of their relative unimportance but also because they be too difficult (chandeliers) or heavy (the billiard table) to move

3. The next step is to prepare a Damage Limitation Priority Card for each room or space. This card will be summarise the priority items in the room and key these to a photograph or plan. Also contained on the card will be information about any special security or fixing measures which may hinder removal of the items. Finally the card will indicate the location to which the items are to be taken for safe keeping for the duration of the emergency.

4. Items which are not to be removed (for example because they are too heavy or large) may be afforded some degree of protection in situ. For example, bags or sheets made from lightweight protective materials such as a polycarbonate/Nomex sandwich will provide some degree of fire resistance, protection against smoke and water and at the same time provide protection against mechanical damage. Suitable prefabricated covers could be manufactured and stored adjacent to the items which are to be protected. Close woven netting bags or even heavy duty sacks may be used to protect chandeliers from light smoke and heat and will also retain all the component parts in one place should the chandelier fall from the ceiling.

5. Steps should be taken to identify areas which will be suitable locations to which items can be initially removed and where they can be logged, packed and crated prior to transportation to a designated secure storage area.

D. Fire Brigade Support of Damage Limitation Activity

1. It is essential to obtain support from the local fire brigade before setting up the DLT - it would, in my opinion, be impossible to operate a successful DL function without active brigade co-operation and support.

2. In my experience most fire brigades would also welcome DLTs which could provide the following support:

- Guides to enable fire fighting personnel to reach the source of the fire;
- Assistance in accessing secured areas;
- Local knowledge of areas such as utility rooms, chemical/gas/flammables storage areas;
- Technical support in operating equipment such as PA systems, CCTV, radios etc.

E. Fires Outside Opening Hours

1. The situation will clearly be different when the premises are closed and the fact that many fires take place during the night must create some cause for concern. Even where buildings are protected by 24 hour security cover it is unlikely that the relatively small number of people on duty in even the best secured property will be able to under much DL activity.

2. In the case of the Schönbrunn DLT the situation is complicated by the distances some DLT members have to travel and by the phasing-out of the public radio-paging system in Vienna.

3. Obviously in rural areas this may not be a problem but the other side of the coin is the likelihood that the local fire brigade will be small and lightly equipped.

F. Implementation of Damage Limitation Plan

1. One of the major factors in the DL process is that significant improvements in risk reduction can be accomplished with comparative little expenditure - when compared with the likely spend on fire protection or security enhancement.

2. Actions required, after management support has been assured are:

- Selection and nomination of DLT Head and Deputy;
- Training of Head and Deputy;
- Complete the process of identification and recording evacuation priority for artefacts;
- Production of a detailed damage limitation plan and call out lists;
- Selection and training of up to four teams each of 4 operatives and a supervisor;
- Acquisition of paging/communication system to provide group alerting of all team members;
- Acquisition of damage limitation supplies and equipment;
- Allocation of spaces for temporary storage of evacuated items

- Training and exercises with fire brigade;
- Nomination of training of support staff to assist in packing and removal of artefacts;
- Full scale exercise with all personnel and fire brigade.

3. Regular (monthly) training of team members will be required thereafter together with basic training of additional or replacement team members.

4. In the case of the Schönbrunn project considerable benefit was obtained by sending team members to the UK to see how their opposite numbers at Windsor and Hampton Court operate. This approach is likely to be very cost effective and is highly commended

5. Recruitment of operatives should be subject to established medical and fitness standards for similar personnel in industry. Reference to the standards within Austria for volunteer fire fighters may be appropriate.

G. Damage Control Equipment

1. Basic stockpiles of appropriate equipment should be set up in at least two locations in each building to be protected. Each locations should be provided with the following, preferably stowed on a trolley which can be pushed by one person:

- 2 x 4m lightweight ladders;
- 1 toolbox complete with appropriate tools (including 2 each carpet knives, wire cutters and small crow bars);
- 2 large battery-powered hand lamps and spare batteries
- 4 plastic buckets, scoops, sponges and mops;
- 10 flat-pack plastic crates;
- 1 large roll bubble wrap;
- 1 large roll wrapping paper;
- 50 large self sealing plastic bags;
- 50 medium self sealing plastic bags;
- adhesive tape, labels, string, indelible markers and scissors;
- protective clothing including dust masks, rubber gloves and overshoes.

2. In addition to the above the same equipment less the tool boxes and ladders should be provided in two locations on the ground floor for use by support staff in packing artefacts.

3. A suitable location on the ground floor should also be found for storage of the following:

- electric submersible pump and hose (for pumping out lift shafts, basement areas etc.);
- 200 sandbags;
- 4 x plastic flat scoops;
- roll hazard warning tape;
- 10 rolls paper towels;
- 2 water misting sprays;
- 5 x 2 litre bottles distilled water
- conservation equipment for paintings;
- first aid kit (large)
- 2 eye wash bottles
- 200 large self sealing plastic bags
- 100 small self sealing plastic bags
- 1 roll acid free tissue paper
- stationery box (pens, pencils, markers, rubber bands, paper clips, scissors, labels tags and chalk)
- 50 polythene aprons
- 5 boxes lightweight disposable polythene gloves

- 2 x wet/dry vacuum cleaners;
- 6 large capacity electric fans;
- large tool box with appropriate tools;
- 2 x 7m extending ladders;
- 4 low level trolleys (for moving heavy objects);
- 4 tarpaulins/covers at least 20m x 10m;
- Heavy duty cord/rope.

4. Each of the conservation specialists employed or utilised by the location should be asked to nominate the contents of a box of emergency supplies for his or her own speciality and this should be stored in a designated location on the ground floor.

5. Consideration should be given to the need for additional tow way radios and additional units purchased for emergency use if deemed necessary.

H. Safety and Security

1. It is essential the Palace's liability and workman's compensation insurers are notified of the intention to set up the damage limitation teams.

2. The damage limitation plan and its constituent documents should be classified as confidential and kept under strict control. All copies of these documents should be numbered and no unauthorised photocopying should be permitted.

3. All staff expected to work inside the building during an emergency should be supplied with appropriate personal protective clothing and equipment. This should include:

- Hard hat with chin strap and attached battery-operated flashlight;
- Flame retardant (Nomex® or Proban® or equivalent) one piece coveralls;
- Boots with internal steel sole and steel toecaps;
- Leather gloves with Nomex® insert;
- Supervisory personnel should wear a coloured tabard or similar item marked to designate their role;
- The management member designated to take charge of the incident should wear a fire brigade- approved jacket indicating his/her role.

4. All staff liable for call-out to emergencies should be provided with a special ID card identifying them as members of the Palace's staff requiring access during emergencies

I. Conclusions

1. Based on the recommendations of a consultant with specialist expertise in the management of heritage protection, the Schönbrunn Palace management decided to set up their own DLT. This was accomplished in less than 12 months and now forms a key part of the Palace's loss prevention/risk management plan.

2. DLTs play a key role in the mitigation of damage, not only in case of fire but also in respect of a range of other unwanted incidents which can affect a heritage building.

3. The DLT, if properly trained and motivated, can prove extremely cost-effective in relation to the degree of risk reduction achieved by its existence.