

Museum and Gallery Security

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Résumé

Les musées doivent évaluer les menaces qui pèsent sur leur collection, telles que le feu, l'eau, le vol et le vandalisme. Ils doivent prendre les mesures appropriées pour y remédier, en s'appuyant si nécessaire sur les conseils de spécialistes. Ces mesures comprennent l'identification des zones à risques et des collections particulièrement vulnérables ; les besoins en équipements de surveillance (alarmes, clés) ; la formation du personnel ; l'inventaire des procédures de contrôle et les assurances. Lorsque des défaillances sont repérées, les musées doivent estimer et planifier l'ensemble des mesures et des besoins en équipements de sécurité permettant de les combler. Une politique globale devra être envisagée si le bâtiment est surveillé par le personnel 24 heures sur 24. Certaines mesures de sécurité pourront alors être assouplies. Sinon, les mesures de sécurité les plus strictes devront être prises dès l'ouverture de l'institution. En Grande-Bretagne, il est possible de recevoir des subventions du gouvernement pour la protection des objets prêtés figurant dans une exposition. Les dispositifs de protection de ces objets doivent alors être délibérément aux normes exigées. Cependant, cette subvention gouvernementale n'est pas systématiquement accordée, même si les normes de sécurité du bâtiment sont conformes. Chaque exposition fait l'objet d'une étude spécifique, prenant en compte la nature, la valeur, l'intérêt des œuvres présentées et d'une évaluation des risques face au vol. Si l'exposition est considérée à haut risque, comme par exemple une exposition d'objets précieux en or, il peut s'avérer nécessaire d'imposer des mesures de sécurité complémentaires, comprenant notamment un gardiennage de 24 heures, avant que la subvention du gouvernement ne soit accordée.

The Museums Security Adviser issues the following advice applicable for buildings housing collections which need to be protected from theft and damage, and where a level of security has to be achieved by those wishing to take advantage of the MGC Registration Scheme, Government Indemnity Scheme, Lottery funding and preparing general security improvement pro-

grammes. Museums should assess the risks to their collections from such threats as fire, water, theft, vandalism, and take appropriate steps to meet them, seeking specialist advice as necessary. This will include the identification of particularly vulnerable areas and collections, the requirement for physical protection and alarm systems, staff invigilation, key security systems, inventory check procedures, and insurance arrangements. Where weaknesses are identified, museums should make an assessment of the additional requirements and plan to meet them within an appropriate timescale.

It is suggested that a policy decision needs to be made as to whether the building will be manned 24 hours a day. If it is to be so occupied then some limitation on the strength of the defensive measures is acceptable. If not, then the strongest possible defences should be built in at an early stage.

It may be intended that the security arrangements of the building should be of the standard required to obtain the grant of Government Indemnity for exhibition of borrowed artefacts. It must be understood that even if the standards discussed in this paper are achieved there will not be automatic grant of indemnity for each and every proposed exhibition. Each application is considered individually, taking into account the nature, value, attractiveness, portability and disposability of the material forming the exhibition. In the case of very high risk exhibitions, such as the display of valuable gold artefacts, it may be necessary to impose additional security conditions such as the deployment of 24-hour guards before indemnity can be granted.

Physical defences

An efficient intruder detection system may promptly identify an intrusion into a building and cause a message to be sent for the police to respond, but it provides no form of resistance to intruders. This can only be done by physical means, which can often defeat the intruder or at least buy time for police to attend in response to the activation of the alarm. For this reason physical defences form the cornerstone of MGC security advice.



Control Centre. Photo: Leroux.

The nature of the collection, its value and its portability will influence the degree of protection provided but the shell of the building must in all cases be of substantial construction: Brick, stone or concrete materials generally provide the best resistance to forcible attack; openings in the shell, such as doors, windows and rooflights, must be reduced to the absolute minimum. Those remaining should be strengthened to deter and delay entry.

New Buildings

Basic security measures can be designed into new buildings. It is not intended to restrict the architect's freedom to design buildings suitable for the surrounding environment or those which will enhance a museum collection; but the architect is entitled to an explicit brief on security matters in the early stages. Security advice taken at this stage may not only avoid the need for the later addition of security measures that might spoil a building's appearance but will also prevent additional security costs when the building is taken into use.

The Design Stage

Building security requirements into the design at this stage makes it possible to limit features that might assist an intruder to gain access.

– As the shell of the building is usually regarded as the security perimeter, the number of openings

should be limited to those necessary for access, ventilation and natural light.

– Doors, windows and rooflights must all be protected to reduce the risk of large volume loss during the silent hours, and have the ability to resist a determined physical attack for as long as the time needed for response forces to attend.

– The presence of pipes, ledges and buttresses can make windows, rooflights and doors accessible to the intruder.

– Access/exit can also be made easier through the provision of emergency escape routes that are not secured internally during closed hours, or sufficiently protected during open hours.

– Good design can also reduce the possibility of thieves' concealing themselves within premises during opening hours to break out after closing time. By avoiding unused spaces, dead ends, insecure ducts and panels, places where someone could hide can be limited.

– Provision needs to be made for a secure division between the areas which are open or closed to the public, with the intruder detection system being designed accordingly.

– Attention paid to the exterior can prevent areas for concealment such as vegetation, porches, deeply recessed doors and adjacent buildings.

- The risk of attack from an attached building that is not defended to the same degree may not be immediately apparent, but this may require the party walls to be of stronger construction than might have been the case. Materials such as breeze block, foamed concrete, sheet asbestos, aluminum sheeting, plasterboard, hardboard and bitumen bonded substances, are now used extensively in the construction of buildings, but they do not offer the same resistance to attack as the more traditional materials.

Existing Buildings

A very wide variety of premises is used to house museum collections. Many were not built for the purpose, and security requirements played very little part in their design and construction. The listing of a museum as a building of special architectural or historical interest also restricts alterations or additions unless listed building consent can be obtained.

- Whenever possible, unused doors and windows should be bricked up to the same constructional strength as the surrounding wall. By leaving a door or window in place and confining the infill to the interior of the building it is possible to retain a museum building's appearance.

- Rooflights should also be eliminated if not required, although it is recognised that in top-lit galleries this may be impracticable.

- Some strengthening can be achieved with the advice of planning authorities, especially by taking advantage of maintenance and repair programmes. For example, a roof constructed of slate or tile to unlined battens can gain considerable strength if the slates are relaid to a close boarded timber covering and/or an expanded metal shield provided at a time when re-roofing takes place.

Securing all apertures to existing museums can be a substantial and expensive task. Sometimes the best approach may be to define an initial scheme which excludes some parts of the building from the primary security perimeter. It may be argued that this is bad practice as areas which remain unprotected could provide a place of concealment from which an attack can be

mounted. However, by defining a smaller security perimeter drawn around the high risk items, the remaining area outside can become an alarmed buffer zone, able to signal the progress of an intruder towards the protected area.

Door Defences

A variety of different degrees of protection can be provided to doors and their openings.

- An exterior door must at least be constructed of solid hardwood or solid hardcore construction. Further strength to meet increased risk can be provided by using steel doors of varying thickness or laminated security doors with reinforced plastic or steel sheet inserts.

- A door frame must always be capable of carrying its door and be of at least equal strength. Security doors and frames can be provided in their own purpose-made sets.

- Glazed doors to the exterior must always be regarded as weak and supported by a secondary system, such as steel roller shutters, expanding steel gates or laminated security doors fitted inside the primary door. These can be cost-effective and aesthetically acceptable.

The weak point of any door is often the locking system, so care must be taken over the choice of system, in consultation with a master locksmith in the case of high risk premises. Locks come in many different types, sizes and qualities but careful consideration should identify an appropriate system. Hinge bolts will help to hold the door in its frame during an attack, and are essential if hinges are exposed to the attack side.

Emergency Exits

While public escape routes are essential, it is important that emergency exits do not make it especially easy for a thief to make a rapid escape with his spoils. This applies whether the premises are open to the public or closed. Security requirements can seem to conflict with safety requirements for emergency exits. The interpretation of the legal requirements for escape routes varies from area to area, so it is hard to offer a simple rule on this matter. Often in the daytime,

during museum opening hours, it has been possible for a thief to snatch or smash and grab and flee through a nearby exit. The thief can be thwarted if the door is additionally secured by an electromagnetic lock which is connected to the fire alarm system. Alternatively, a solenoid switch incorporated into the release equipment can delay the release for a short predetermined period. At night, when the premises are unstaffed, some form of deadlocking can be used but it is essential that this is unlocked when the building is occupied. Staff responsible for opening up the premises can be reminded of this by linking to the intruder detection system control box where a "locked" state can be visually and audibly indicated.

Window Defences

Windows and rooflights will always be a major problem for museum security. Sometimes even very high windows can be reached from adjacent roofs or ledges. The following can be used to advantage:

- glass bricks set in steel or concrete frames for rooflights;
- windows with a locked or steel sash with panes not more than 23 cm x 18 cm, or
- narrow windows with effective openings of no more than 18 cm.

Although it might be possible to treat some windows in this way, the real defence of windows and rooflights will rest in secondary protective measures such as:

- steel roller shutters;
- iron or steel bars;
- collapsible gates and grilles;
- secondary glazing using for example glass / polycarbonate / glass lamination.

Intruder Alarm

Experience shows that the value of an intruder alarm is limited if entry to and escape from the museum can be effected before the responding authority arrives on the scene. This is why the need for strong physical security has been emphasised above. An intruder alarm system can then be used very effectively by giving an early signal of an attack as the burglar attempts to defeat the building's physical defences. In combination these features give the appropriate authorities the best opportunity to respond.

It is imperative that the signal notifying an attack is safely transmitted to a monitoring agency. Museums cannot rely upon systems which cause a bell or siren to sound on an external wall in the hope that the thief will be frightened off or a member of the public will alert the police. An automatic system using a monitored telephone line (eg BT RedCARE) to an alarm receiving centre which in turn alerts the police is essential. An automatic system is now so essential for a museum that if it is temporarily lost for any reason, then a human presence must be provided in its place.

Most intruder systems have a combination of perimeter and trap protection.

- Perimeter protection is generally understood to include devices activated by intrusion or forcible attack upon the security perimeter. All openings in the fabric of the building, such as doors, windows, skylights and ventilation shafts (including those giving access from adjacent accommodation outside the museum area) need to be covered. The alarm company will take environmental factors into account, but where possible the earliest notification of an attack on the perimeter should be signalled. If the system only detects once the perimeter has been breached then valuable time will have been lost.

- Trap protection is used to describe those devices activated once the intruder is within the perimeter. This form of detection relies upon the identification of movement and/or body heat. Modern dual technology detectors rely on the identification of both before an alarm is signalled. Although these units are more expensive they are more reliable and subject to fewer false activations.

A combination of these two approaches is usually the most effective way of providing the required standard of security. Given the emphasis above on the need for a physically strong perimeter, then perimeter protection is of primary importance.

The Police Response

For many years the Police Service has been struggling to manage

the ever increasing number of false calls generated by automatic intruder alarm systems. Over 90% of the calls relayed to the Police do not result from a criminal act but from wrong setting or unsetting of the system by the user, defective or inappropriate equipment, or line faults. The Association of Chief Police Officers (ACPO) has therefore devised a policy for the management of alarm systems to reduce the waste of valuable police resources. It seems likely that in due course all UK forces will apply most of the principles set out in the policy, but the means for doing so is likely to vary locally. The new policy requires that systems and alarm companies' control rooms and practices must comply with the standards set by the National Approval Council for Security Systems (NACOSS).

- If all the standards are met, the Police will undertake to provide what they have defined as a Level 1 or Immediate Response.

- If the standards are not met, or there is an unacceptable false call rate, then the response is likely to be downgraded to Level 2 (as police resources against demands permit) or no attendance at all.

- It is essential for a museum or art gallery to have an intruder system and alarm company which meet the NACOSS and ACPO standards for immediate response.

- Properly designed and maintained modern systems, operated by staff who have been fully trained in their use, should not be the subject of false calls. Although in the past MGC security advisers have helped to negotiate with police forces to restore their response to systems that have generated too many false calls, under the new policy this will be difficult to achieve.

Users must require their alarm companies to identify the cause of false activations at an early stage and insist very firmly on receiving the quality of service specified in their contract. Those responsible are strongly advised to consult with their alarm company and local police crime prevention officers to ensure that their systems meet the required standards.

Fire detection

Without early detection whole collections and buildings can be lost. It is therefore essential for museums and galleries to have an automatic fire detection system that will give an early indication of the presence of fire. A number of systems are commercially available that will detect heat and/or smoke. They then transmit an alarm over a telephone line to the fire brigade, or more often to an alarm company's receiving centre, as well as causing a local alarm to initiate an evacuation of the premises.

Fire Precautions

Reducing the risk of fire by "good housekeeping", as promoted by fire prevention officers in their training schemes, can bring major benefits. Regular cleaning and removal of waste products and an inspection system to check that the building is safe when locking up at night are essential. Many fires are caused by the misuse of electrical appliances such as fires and the careless disposal of cigarette ends. These potential causes can be easily discovered if daily inspections are incorporated into a good housekeeping regime.

Sprinkler Systems

Improvements in the reliability of fire detection systems have made them more acceptable to museum and gallery authorities, especially as the cost of providing night guards has escalated. There is still, however, considerable resistance to the use of automatic suppression systems such as sprinklers. Understandably, museum staff fear the destructive consequences of an accidental discharge of water upon the collections in their care.

Displays and exhibitions

Internal Layouts and Visitor Flows
The layout of exhibitions and circulation routes through galleries can be arranged to provide maximum security protection without limiting the presentation of the collection. Such layouts must also be able to cope with the flow of visitors in both normal and abnormal circumstances. Galleries situated away from outside walls and above ground level are also less easy to penetrate and thus are likely to be more secure.

When planning the layout of exhibitions particular attention must be given to:

- Sightlines to ensure that invigilators have the best possible view, and no hidden corners are created where a criminal can work in seclusion.
- Display of material in such a way as to prevent easy removal by opportunist or determined thieves.
- Open displays or room settings where exhibits are directly accessible to visitors.
- Paintings, drawings and similar objects which should be secured to the walls by mirror plates and security screws, or similar approved methods.
- High value pictures may be further protected by alarms.
- No objects which could be easily removed should be displayed close to doors giving ease of escape from the building.

Display Cases

Display cases are the last line of defence for exhibits in public galleries. Cases are sometimes required to provide an appropriate environment for sensitive exhibits but they may be more necessary for security reasons. While large exhibits such as paintings and statues may be protected by appropriate physical or electronic barriers, small and attractive or fragile objects should be housed in strong, secure display cases. Varying levels of protection can be provided to reduce the risk of accidental or intentional damage and theft, but much will depend on the quality and number of security staff available in the area. If a case is robust enough to resist attack this may compensate for limitations in another element of the security provision.

Invigilation

Whilst some establishments are able to employ attendants solely in the role of gallery invigilators, many museum authorities use them to cover a full range of security and other duties.

- Maintaining security has to include knowledge and training in emergency procedures for incidents of theft, damage or fire.
- A regular inspection routine must be followed to ensure safety of the

exhibits, the integrity of the building and to identify fire hazards.

- In particular, a search of the building at closing time must be undertaken to ensure that nobody has hidden themselves on the premises and that detectors on the alarm system have not been masked by spraying or sticking some form of material over the window.

- Masking can usually be detected by a walk test.

In the absence of night guarding, most buildings, if protected in accordance with MGC advice, can be left unattended. Even when a night guard is employed modern practice is to monitor the building electronically and by closed circuit television rather than by regular patrol alone.

Closed-Circuit Television (CCTV)

The use of CCTV to counter criminal activity is rapidly increasing. It is not some form of panacea, but if its application is carefully thought through it can be a very reliable aid in combination with other means of meeting the threat of crime. CCTV can enable invigilators to be more effective, act as a deterrent, make recordings to assist with post-incident investigation, assist with entry control arrangements, provide general information to assist in the management of the premises and where the premises are guarded out of hours to assist with site monitoring.

Private Functions

Many museums offer space for private and commercial functions either during or after normal public opening times and put on their own receptions for the opening of special exhibitions. It is important that these events are carefully supervised. The conditions laid down for functions where there is Government Indemnity need to be applied equally to all functions if damage to the collection is to be avoided.

Key control

There needs to be a strict policy regarding the issue, possession and storage of keys. Too often the possession of keys is based on status or convenience when the deciding factors ought to be real necessity and accountability.

- All keys other than the external door keys in the possession of nominated keyholders must remain in the building in a secure cabinet or safe and be identified by a coding system - not with a tag indicating its purpose, e.g. "silver store".

- The issue system should operate in a secure area, ideally a security control room. Some system of authority for the drawing of keys needs to be drawn up, based on need and accountability.

- Keys are only to be issued against signature in a record book kept for the purpose to those authorised for the purpose.

- On no account should keys be issued to contractors or other outside agencies.

- A proper system will enable a visual inspection at the end of the day to confirm that all keys have been returned.

Local police and security/fire alarm companies (as appropriate) must always have full and current details of keyholders to the premises. If advice is required on the right lock for individual needs, purchase, repair, upgrading, constructing, servicing, maintenance, suiting and design, this is available at the Lock Advisory Centre at the British Museum.

Access Control

Advances in technology over recent years have brought about various means of controlling the access of visitors, staff and others to buildings and parts of buildings.

Computer Security

In the main this paper concerns itself with measures to protect artefacts. However, the increased use of computers in displays and for record keeping brings its own threat of crime. Computers can benefit in the same way as artefacts through good building security and invigilation, but there are also devices on the market to secure computers themselves.

Following the forgoing advice a minimum level of protection can be achieved with potential to satisfy good or best practice recommendations. Further advice can be obtained from the Museums Security Adviser at the address shown at the top.