PREVENTING THEFT FROM MUSEUMS:

SECURITY AND RECOVERY MEASURES

Recommendation paper

EUCPN
EUROPEAN CRIME PREVENTION NETWORK

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PREFACE

Museums find themselves in the ambiguous situation of having to protect their collection from threats such as fire, damage and theft on the one hand, while putting them on display and making them available for study on the other. As many items in museums are of cultural and artistic significance, they are irreplaceable, and the losses when they are stolen or damaged may exceed their market value. Fortunately, the theft of objects of cultural or artistic significance from museums can, to an extent, be prevented. In this paper, we will consider two prevention mechanisms. The first is target protection, i.e. the security measures that can be taken to make it harder to steal something from a museum. The second is reward reduction, that is, measures to increase the likelihood that stolen items will be successfully recovered and to make it harder to sell them, so that art theft becomes less attractive.

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01 COMPREHENSIVE MUSEUM SECURITY: DIFFERENT LAYERS OF SECURITY

A common approach to site security and corporate security is what is sometimes referred to as the castle approach.[1] Just like a medieval castle, the security of a museum should not rely on just one security measure but on different layers of security. A medieval castle had armed guards on the towers, a moat with a draw-bridge, and if intruders still made it to the gate, they would have been covered in hot oil.

Likewise, museums can – and should – take multiple security measures. There are different ways to classify these measures. One way is to look at the physical location of the security measures. Around each museum exhibit, there are several possible layers of protection, with the closest pertaining to that particular item, and the most remote to the periphery of the museum. Think, for instance, of the following situation: an item is in a locked display case; the room it is in is locked at night; there is a ticket check between the common area (entrance hall) and the exhibition rooms; there is a metal detector at the entrance; finally, there are cameras monitoring the surroundings of the museum building.

Another way to think about security measures in museums is in terms of their moment of interaction with the potential perpetrator. A museum could take measures to prevent perpetrators entering the museum, grabbing an exhibit and walking back out with it. A hybrid model of museum security integrates both the temporal and spatial categorisation (see Figure 1), making it possible to select security measures to intervene in a particular phase of the theft in a particular place. Museums should therefore ask themselves what they can do at the periphery of the museum to prevent offenders entering irregularly, but also to prevent them leaving (unnoticed).

1 Several existing guidelines for museum security (partly) use this approach. See for instance the guidelines published by CFPA Europe (2012) and a publication by the Italian Carabinieri, the Italian Ministry of Cultural Heritage and the International Council of Museums (Compagna et al. 2015).

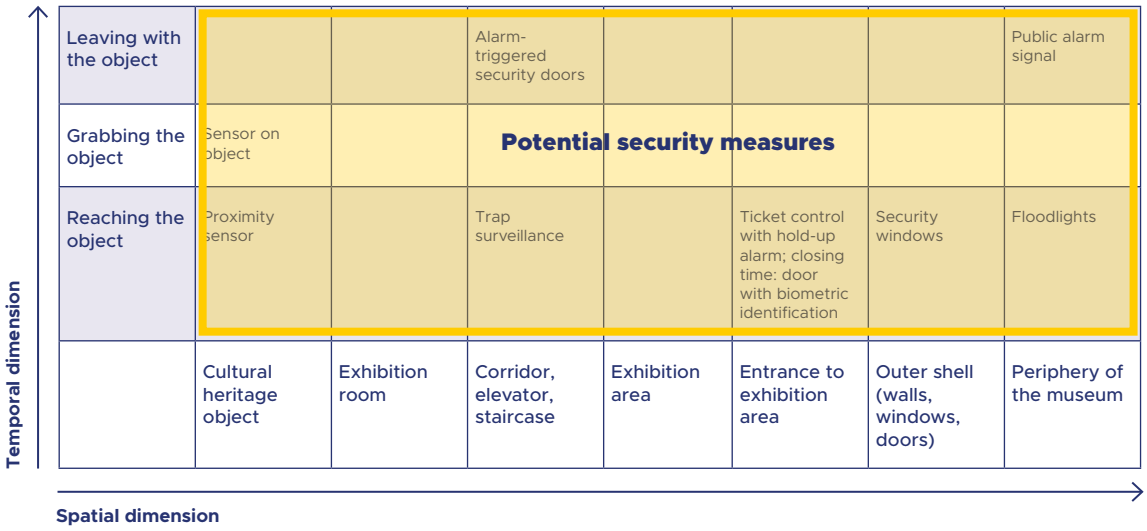

Figure 1. Schematic representation of potential museum security measures along spatial and temporal dimensions.

Such models are useful in developing a comprehensive or integrated approach to museum security, which is the best way to prevent theft from museums. Comprehensive museum security does not rely on one or a few security measures, but aims at creating a multi-layered shell around the museum collection, specifically the most valuable items. In the real world, that shell will never be water-tight, as there will always be trade-offs according to the available resources.

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1.1. Different types of security measures

In every layer, a museum can take several types of security measures, which again can be classified in different ways. A distinction is often made between human action on the one hand and technological solutions on the other. A further differentiation could be made between security measures active during the opening hours of the museum and those in use when the museum is closed. Security measures can also be categorised according to their function. Different functions include throwing up a mechanical barrier between the perpetrator and the exhibit (e.g. a security door) and aiding in the identification of an offender (e.g. a camera).

Physical barriers

Walls, locks, doors, windows, … When designed or selected with security in mind, these have the capacity to keep intruders out. However, each of them can also be the weak link: windows and doors are openings in the museum shell, and thieves use them to get in. Physical barriers are probably the most important set of security measures a museum can take. They involve a one-time investment and incur few personnel and running costs afterwards. Ideally, the physical barriers should prevent someone entering and leaving the museum irregularly, but when they fail to do so, they should at least prolong the time it takes to enter the museum, which in turn would increase the chance of detection and create opportunities for intervention.

Windows should be made from security glass and be fitted with a lock. If that is not possible, for instance in historical buildings, double windows and iron bars are viable alternatives. Likewise, doors should be braced, firmly attached to the walls and use reinforced hinges and multi-point security locks. Walls are a no-brainer, but an important consideration is the avoidance of lightly constructed interior walls for protected zones (exhibition area, storage). Finally, it is critical that attention be paid to all other openings in the outer shell, ranging from ventilation openings to skylights. The first could simply be protected by iron bars, while the latter are subject to the same requirements as regular windows.

Peripheral deterrents

In addition to physical barriers, measures can be taken to increase the chance of getting caught at the periphery of the museum when trying to break into a museum or when leaving the museum with a stolen item. The presence of such measures could make a particular museum site less attractive to intruders. Examples of such measures include automatic floodlights, which draw attention to offenders and make it easier to spot them, and doing away with hiding places such as trees or bushes.

Access control

One of the challenges of museum security is that museums cannot be designed to just keep people out; their mission is to give the public access to the items on display. That does not mean, however, that everyone should have unlimited access. The most basic way to control access is a ticket counter, which

no one is allowed to pass unless an entrance fee is paid. Other access control systems contribute more to the prevention of theft from museums. For example, X-ray machines and metal detectors at the entrance help prevent potential thieves bringing in tools that can be used to steal an item or manipulate security systems.

Visitors should not have access to all areas of the museum, but only to the exhibition rooms and possibly a museum shop. Storage rooms and restoration workshops, security rooms and offices should be accessible only by authorised staff. Access control systems, i.e. door locks and (pass) keys, badges or biometric identification devices are all viable ways to control access to different rooms by the public and different categories of personnel. Badges and biometric identification have the added benefit that they track who was where at what time.

In cases where keys are used, it should be clear at all times who has access to which parts of the museum. Steps should also be taken to ensure that keys are not being shared between staff, that keys do not go missing and that no keys are circulating without those responsible knowing where they are. If that is not the case, keys may be a liability rather than a security measure.

Alarm systems and sensors

Alarm systems are designed to warn selected individuals of irregular activity in or around the museum based on the input from an employee, an electronic sensor, or possibly security images. In response, museum personnel, security personnel or law enforcement could take actions to disrupt the criminal act and apprehend the offender. A public alarm signal cannot trigger a response without the offender knowing, but it could scare away the offender.

A distinction can be made between different types of alarm systems. Intruder alarm systems (IAS) are triggered when someone is trying to break through the outer shell, comparable to a domestic burglar alarm. However, a perpetrator may also enter legitimately but still commit a robbery or hold-up. In such cases, museum personnel who witness the act could trigger a (silent) alarm by pressing a hidden button to notify colleagues, security personnel and law enforcement. This is called a hold-up alarm system (HUAS).

A distinction is often made between human action on the one hand and technological solutions on the other. A further differentiation could be made between security measures active during the opening hours of the museum and those in use when the museum is closed. Security measures can also be categorised according to their function.

Finally, sensors may trigger an alarm to protect one or more particular exhibits. Motion sensors can indicate activity in a particular exhibition room. There are also particular devices that trigger an alarm when a particular item is touched or removed. For instance, there are wall hooks for paintings with an integrated sensor, so that the sensor is triggered as soon as someone lifts the painting. Similar systems, called tear-off detectors, exist for items such as sculptures. Special canvas monitors can detect when someone attempts to remove a canvas from its frame and capacitive sensors are able to detect when someone approaches an item too closely.

Surveillance

Surveillance can be used to monitor the movements of visitors and potential perpetrators. Surveillance can be carried out by guards who patrol the museum or its surroundings. Other staff members can be vigilant as well. Mostly, however, museums rely on video surveillance systems (VSS).

There are pros and cons to both, depending on the situation. Guards may suffer a lapse of attention now and then or may simply be out for a break. However, they are also smart and mobile: their primary task may be to monitor a particular display case, but if someone attempts to steal the next exhibit, the guard will notice and take action. This also means they are susceptible to distraction and deception. Cameras, on the other hand, always stay focused as long as they are powered, but will be rendered useless by a (malicious) power outage. Simple applications are not as smart as humans, as they only capture what is within their field of view and never initiate action. Nowadays, there are smarter systems, sometimes using artificial intelligence, which are able to track suspicious activity and alert security personnel.

An important consideration is the location of cameras and guards. Perimeter surveillance should complement a well-protected outer shell by focusing on the weak points: windows and doors. Focal point surveillance focusses on potential perpetrators who are already in the museum and ideally make it possible to follow their steps. However, this requires a dense grid of cameras and preferably a smart system. A more economical alternative is trap protection, in which surveillance cameras are installed in places where offenders are bound to pass, such as staircases, corridors, narrow passages, and lifts. Finally, cameras or guards can also keep an eye on particular exhibits, although sensors such as the ones mentioned above may be more effective and less labour-intensive.

1.2. The organisational aspect of museum security

A key aspect of museum security for the purpose of theft prevention is the organisational aspect. The measures and systems described above should be tailored to the setting, supported by well-trained staff, and integrated with each other so as to create a tight web of security. Most importantly, many security measures rely on the proper staff action: doors should be locked, camera images monitored, and so on. Good security protocols are transparent and clearly define the role of everyone involved.

It is recommended that one security commissioner coordinates the security policy of the museum. In smaller museums, that person could also take on other work; in bigger museums, he/she will be a dedicated security manager. Central to the security system is the control room and its staff, when present, as key decisions will be taken there. It is important that there is an efficient connection with, and a flow of information between, other museum staff and security devices and the control room, so that appropriate action can be taken at all times.

1.3. A risk-based approach

To attain the most effective museum security for the available resources, a risk-based approach should be adopted (cf. Pedersoli et al. 2016). Museum security is always a balancing act between the advantages and disadvantages of different security measures. A museum also cannot have them all, if not for budgetary reasons, then because a museum is a (semi-) public space which, by definition, provides access to items of cultural heritage.

The first essential ingredient of a risk-based approach is a risk assessment. The risk assessment should provide a detailed and comprehensive view of all the risks that a museum is facing. This also includes non-criminal risks such as floods and fires. However, a risk assessment is more than a description of the different risks. It should also include reliable estimates of the probability that something may happen and

provide adequate estimates of the value of the loss in event it should happen. In other words, it should be able to answer questions like: What is the chance that a museum is hit by a flood? Which items and how much money will be lost when that happens? What is the loss when the most valuable item is stolen, as opposed to any other item? Are there items that thieves are more likely to steal than others? This will naturally lead to a risk classification, which in turn will help prioritise risk mitigation and security measures.

Another essential aspect of a risk-based approach is that it should provide an accurate view of the benefits and costs of possible security measures. Security measures should provide effective protection against the risk one wants to mitigate. For instance, if both the entrance and ground-floor windows of a museum are easy to break in through, it would be best to invest in security measures that address both issues at once, or to try to protect the most valuable items by other means.

In a risk-based approach, proper attention is also given to what certain security systems do not do; after all, those are the weaknesses in the system. In the above example, metal shutters at the entrance will only divert intruders to the windows, and should therefore be considered an ineffective security measure and a bad investment. Another example is video surveillance. A museum can have the best possible cameras, which are able to follow every move of a visitor and which do not have single blind spot. However, this system cannot prevent someone entering the museum, grabbing an item on display and walking out through an emergency exit.

It follows that effective museum strategies must consist of multiple complementary measures. In addition, security should always be a primary consideration in the decision-making processes in museums, even when those decisions are not primarily related to securing the museum. The decision to put an item on display, where in the museum to put it, how to attach it to the wall or floor and other decisions of that type all affect the risks to which the museum is exposed.

Finally, no security and protection strategy is water-tight. There will always be a residual risk. A risk-based approach helps identify that residual risk. This is important because when it is known, it can be included in the equation even though it cannot be mitigated. For example, a museum may not have any measures to slow down or prevent an armed robbery (hold-up), but could instruct its personnel how to act in the event that something like that were to occur.

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02 REDUCING THE REWARDS

To prevent the theft of items of cultural or artistic value from museums, the focus should not be exclusively on security at museum sites. Security measures can be beaten and when a perpetrator succeeds in stealing an item from a museum, the aim should be to recover the item or otherwise reduce the rewards. A thief who does not succeed in selling the stolen item, for instance, will not be able to enjoy the proceeds of the criminal act.

The successful recovery of stolen art objects (and the apprehension of art thieves) also has a preventative effect. The higher the risk that a perpetrator will not be able to reap the benefits of it, the less attractive museum theft will become to them. Whereas security at the museum site is typically the responsibility of the museum itself, the responsibility for taking measures to reduce the rewards of museum theft is shared between the museum, law enforcement and other investigative agencies, art buyers and collectors.

Inventory

Inventories are a key feature of effective museum security design. An inventory is a register or database of all items in a museum, including not just the items on display but also the items in storage or restoration.

The inventory serves three basic purposes. The first is that it provides a list of all items that are supposed to be in the museum. If an item leaves or enters the museum, for instance for restoration or because it is on loan, this should be properly noted in the inventory. Regular inventory checks make it possible to ascertain that all items are still in the museum and that none have gone missing.

The second purpose is to record key information on each object so that it is easier to identify and recover it in case it is stolen. This includes the artist or provenance and the name or title, the size and weight, the colours, the materials used, the condition it is in, and preferably a picture of the item. Finally, insurers will be interested primarily in the intrinsic or sales value of the items which they have to insure against damage or theft.

The inventory itself must be protected and backed up. Electronic inventories are to be preferred because they facilitate the sharing of information with law enforcement in case an item is stolen. It seems logical that the responsibility for ensuring an accurate inventory lies primarily with the museums themselves. However, many cultural heritage items are not just of economic interest to museums, but are part of the common good as well. Therefore, the UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (1970) specifies that states, too, carry a responsibility for making sure that cultural heritage on their territories is adequately inventoried.

Tracking devices and forensic marking

There are ways to actively track stolen museum items or allow them to be identified by means of technology. In all cases, a unique identifier or tracking device is attached to the item, usually in a way that it is hard to spot. However, different technologies offer different possibilities as far as identifying, detecting, or locating a stolen item.

Miniature RFID tags make it possible for alarms to be triggered automatically when an item is removed from the protected area. As long as the tags are not removed from the item, they could also help in identifying stolen items. More advanced technologies such as GPS tracking and certain Internet of Things applications can make it possible to actively track and locate a stolen item, as long as the tracking device is not removed or disabled (Liu et al. 2019).

A quite different approach is offered by the use of “artificial DNA”. A substance that contains a uniquely identifiable artificial DNA is sprayed on the item that is to be protected. It is invisible to the naked eye, but remains present for a long time and will be transferred to anyone handling the object, so that it has the ability to link perpetrators with the theft (Kuhar 2018).

Database of stolen items

A key measure that greatly facilitates the recovery of stolen art or heritage objects is a database of stolen items, which must not to be confused with the inventory. As the name suggests, a database of stolen items only contains items that are missing and which have not been recovered. Such databases should be maintained by law enforcement or other investigative agencies.

An essential property of databases of stolen items is that they must be accessible not just by the museum and insurance companies, but by everyone involved in the attempt to recover the stolen item. This includes, first and foremost, law enforcement, both in the country of the theft and in countries where the stolen item might potentially be recovered. The international exchange of such information is greatly facilitated by international databases of stolen art or heritage items, such as Interpol’s Stolen Works of Art Database. An important condition for the effective use of this database, however, is that national authorities ascertain that the information they keep at the national level is also included in international databases. For that to happen, it is a minimum criterion for museum inventories that they are able to provide the information required by Interpol’s and other international stolen art databases (D’Ippolito 2012).

A second important category of users of databases of stolen items comprises art collectors, traders and auction houses. By offering as wide a public access to such information as possible, everyone involved in the art trade is able to check for themselves whether or not a particular item can be linked to a crime. In doing so, potential buyers may steer away from suspicious items and even notify the authorities in case of theft. Sellers, in turn, should be aware that they could easily be unmasked as traders of stolen goods. Ideally, consulting databases of stolen goods becomes something like a legal duty for buyers. The EU Directive on the Return of Cultural Objects Unlawfully Removed from the Territory of a Member State considers it part of the “due care” that the buyer is required to exercise when acquiring a cultural object.

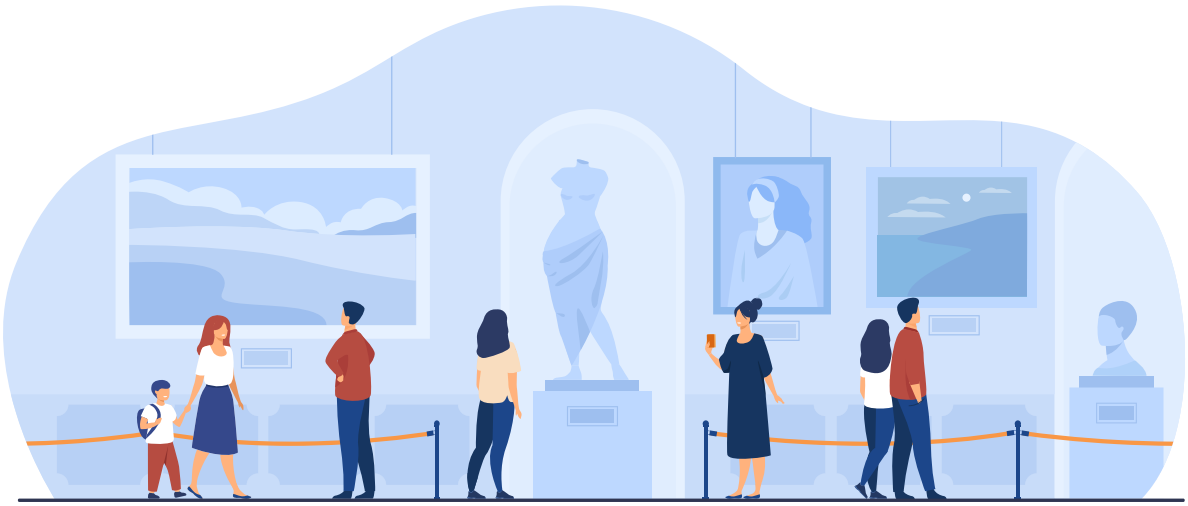
In the EU, Italy’s Database of Stolen Cultural Property (Banca dati dei beni culturali illecitamente sottratti), maintained by the Carabinieri, is a model for such a database. It took the lead in the EU-funded PSYCHE project, which implemented the Interpol database and ensured interoperability with and between national databases in 15 EU Member States.

RECOMMENDATIONS

The best solution to the theft of items of cultural or artistic significance is to prevent it. The two main mechanisms to prevent museum theft are to increase security at the museum and to reduce the rewards of museum theft, so that potential perpetrators are discouraged from committing museum theft in the first place.

For an effective and efficient museum security strategy, the following recommendations should be taken into account:

- The decision which security measures to implement should be the result of a risk-based approach, which estimates the different risks and details how particular security measures mitigate those risks (or not). Such an approach should not disregard basic aspects such as door and window security or the level and type of residual risk.
- Technological solutions can be very cost-effective, but it should be kept in mind that they rely on qualified personnel to operate effectively.
- The organisational aspect of a security strategy is of central importance: the different technological solutions and different categories of staff should be in tune with each other. Staff should know their role and be well-trained. A security commissioner should be made responsible for the (execution of) the security strategy and have oversight. It is also advised that input from different systems (cameras, sensors) is centralised in a control room, where dedicated staff can initiate security interventions.
- The primary responsibility for museum security lies with the museums, but it is best to seek the cooperation and input from security specialists and law enforcement.



To reduce the rewards of museum theft, the likelihood that perpetrators can remain uncaught and especially that they can sell the stolen items should be minimised. This can be done by taking the following recommendations into account:

- Museums should maintain a proper inventory of the cultural objects in their possession. Governments should ascertain that this is being done. These inventories should contain all the descriptive data, including pictures, that will allow each and every object to be uniquely identified.

- Law enforcement and investigative agencies should make sure there are widely accessible databases of stolen items. These, too, should contain information that makes it possible to recognise and identify the stolen objects. They should also work to continually improve the cross-border exchange of such information.

- All actors in the art trade should be made to consult such databases of stolen art, so that they can avoid trading in stolen goods and can alert law enforcement whenever a stolen item is detected.

BIBLIOGRAPHY

Bjørgo, Tore. Preventing Crime: A Holistic Approach. Basingstoke: Palgrave Macmillan, 2016.

CFPA Europe. Security Guidelines for Museums and Showrooms. 2012.

Compagna, Adelaide Maresca, Caterina Rubino, Carabinieri Headquarters for the Protection of Cultural Heritage & Tiziana Maffei. Crime Prevention and Security Management in Museums. Rome: De Luca Editori d'Arte, 2015.

D'Ippolito, Michelle. Discrepancies in Data: The Role of Museums in the Ability of Investigative Agencies to Effectively Recovery Stolen Museum Collections. Collections 8:3 (2012), 235-52.

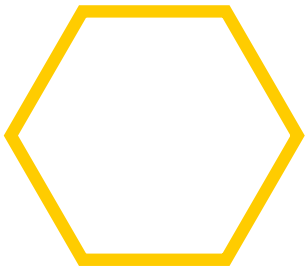
European Parliament & Council of the European Union. Directive 2014/60/EU: The Return of Cultural Objects Unlawfully Removed from the Territory of a Member State. Brussels, 2014.

Kuhar, Saša. Art Crime and Preventive Measures for Museums, Churches and Sacred Objects. Varstvoslovje: Journal of Criminal Justice and Security 2 (2018), 202-17.

Liu, Zeliang, Min Wang, Shikai Qi & Changchun Yang. Study on the Anti-Theft Technology of Museum Cultural Relics Based on Internet of Things. IEEE Access 7 (2019), 111387-95.

Pedersoli, José Luiz, Catherine Antomarchi & Stefan Michalski. A Guide to Risk Management of Cultural Heritage. Rome: ICCROM, 2016.

UNESCO. Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property. Paris: UNESCO, 14 Nov. 1970.



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