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Crime Prevention and Security Management in Museums

DE LUCA EDITORI D'ARTE

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MINISTRY OF CULTURAL HERITAGE,
CULTURAL ACTIVITIES AND TOURISM

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Musei Archeologici Nazionali in Ascoli Satriano, Matera, Nuoro
Palazzo Ducale, Urbino
Palazzo Reale, Naples
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SUMMARY

The security of institutions and places of culture has always been a priority for the Ministry. The integrity of the heritage to be passed on to future generations and the safety of those who visit or work in cultural facilities are essential objectives that must always be borne in mind in national policies and in everyday management of the territory.

In recent decades, Italy has had to cope with increasingly frequent and catastrophic natural disasters, including earthquakes and floods that have caused huge damage to its historical and artistic heritage, revealing its great fragility in the face of the new dangers to which it is exposed.

It has also been necessary to work on the regulatory and technical level to find the most suitable solutions to adapt museums, libraries and archives – which are generally housed in historical buildings of immense value – to the general regulations governing fire protection, while also preserving the overall harmony of the premises and sites. Using ordinary and extraordinary resources as they become available, efforts have been made to augment monitoring technology and alarms to warn against threats to cultural assets, to pre-empt and prevent damage and to make any criminal actions against them more difficult, if not impossible.

But, more than anything, together with other institutions that in their various ways work in the field of security and safety (the Fire Brigade, the Police, Civil Defence and volunteer organisations), much has been done to raise awareness among professionals and the general public concerning these issues. This has involved drafting guidelines and directives, and training those who work in cultural institutions, making sure they are capable of planning the complex prevention measures that are required and creating the most suitable organisation for each facility, improving their ability to use and service their current equipment in order to deal with any emergencies that might arise, both large and small.

With this in mind, we signed up with great enthusiasm to the joint project run by ICOM, the International Council of Museums, and the Carabinieri Headquarters for the Protection of Cultural Heritage (CC TPC), the experience and competence of which is well known, with a view to drafting a handbook for those responsible for public and private museums, and for all professionals involved in their management.

The particular focus of this publication is to prevent and combat attacks against cultural property that might be caused by human intervention, theft, damage, or terrorist attacks, but it also aims to introduce and make known a new approach, in the form of an invitation to tackle security issues in the most integrated possible way in those institutions whose mission is to protect cultural assets, but also to open up access and to encourage a broader, more diverse participation in culture.

Security is not the responsibility of just a few but rather of everyone and, in this globalised world of ours, the measures to ensure this straddle the frontiers of every nation: a commitment at the international level is required to combat the illegal trafficking that fuels crime, and to put an end to the destruction and dispersion of cultural assets in countries affected by wars and revolutions. ICOM, UNESCO and our own Carabinieri Headquarters for the Protection of Cultural Heritage all play an essential role in this broader context.

DARIO FRANCESCHINI

Minister of Cultural Heritage and Activities and Tourism

The world is changing and, whether we like it or not, attitudes are changing too. 'Catastrophic terrorism' is just one of the many problems we are facing, together with rising crime rates and environmental risks, which may or may not be predictable, making us feel insecure and aware of the potential dangers all around us. The methods we have used so far to protect our cultural heritage, which have been based primarily on its preservation, are no longer sufficient. The risks it is facing are greater than in the past, and they come in different forms, which means we are obliged to increase security measures in ways that are far more sophisticated than we would like.

In view of this, all those professionals who work in the sector of art and security need to liaise closely and learn from problems as they arise, drawing on each other's experience and skills.

It is essential to understand that security is not a separate sector, but rather an integral part of the overall management of a museum. This is a fundamental issue for the entire museum, because it involves the staff, the visitors and the collections, and it is also linked to many other activities carried out by the institution, such as financial planning, the registration and documentation of objects, maintenance of the facilities and installations, and the training of members of staff.

This initiative, which arose out of the cooperation of ICOM, through its Italian National Committee and the International Committee for Security, with the Italian Ministry of Cultural Heritage and Activities and Tourism, and with the Carabinieri Headquarters for the Protection of Cultural Heritage, intends to provide museum professionals with a handbook for use in crime prevention and emergency management.

We are well aware that it is impossible to eliminate all risks – for security can never be absolute – but the instructions and suggestions provided by the authors of this publication may help reduce them, making the success of attempted crimes against the cultural heritage more difficult.

What started out as a project by the Italian National Committee of ICOM in collaboration with the Carabinieri Headquarters for the Protection of Cultural Heritage (CC TPC) immediately acquired far greater scope when the proposal was made to draft a crime-prevention handbook for museums and other cultural institutions.

Right from the outset, it had the support of the Italian Ministry of Cultural Heritage and Activities and Tourism, as part of the increasingly close ties it has established with ICOM Italia and which, in preparation for the 24th General Conference of ICOM, due to be held in Milan from 3 to 9 July 2016, has signed a general cooperation agreement.

At the same time, the idea was also submitted to the *Strategic Allocation Review Commission* of ICOM, obtaining funds for its translation into English, thereby making it an international project of the International Council of Museums.

We thus take pleasure in presenting it to the Italian and international community of museum professionals and institutions, for all the many reasons that have led us to promote it.

First and foremost, we do so in recognition of the unique skills of our Carabinieri Corps and of its Headquarters for the Protection of Cultural Heritage, which we have had reason to appreciate for all that it does in Italy, and we are well aware of how celebrated and respected it is throughout the world, making it a model for the organisation of police units devoted to the fight against organised crime involving cultural heritage.

With the Carabinieri Headquarters, we have drafted a collaboration agreement, of which this handbook is the first tangible outcome, but which is part of much broader cooperation in the field of crime prevention in museums. The contributions to this handbook drafted by the Carabinieri Headquarters and by the Ministry clearly show the high level of professionalism and vast experience of both institutions.

Secondly, this result bears out the decision by ICOM Italia to organise itself not just in regional committees open to museum professionals, including those outside of ICOM Italia, but also in commissions and workgroups that correspond to the International Committees of ICOM. The aim here is to harmonise the debate in Italy with what is currently taking place on the global scale.

Our Security and Emergency Commission, whose president is the author of many of the texts in this handbook, plays an active role in training and education and in providing information about the prevention of all manner of risks to which the cultural heritage is subject. The Commission has close links to the international network of ICOM through its *International Committee for Museums Security* (ICMS), the *Disaster Relief Task Force* (DRTF), and its General Secretariat through programmes to combat the illegal trafficking of cultural property, the drafting and publication of the *Red Lists*, participation in the International *Blue Shield* (the National Committee of which is also present in Italy, thanks to the work of the Security and Emergency Commission of ICOM Italia).

Times have changed and great new dangers are threatening museums and the cultural heritage.

We are sure that this handbook will also help prevent them at both the national and international level, in which security management as a whole is an increasingly important part of the everyday management of cultural institutions and sites.

Hans-Martin Hinz
President ICOM

Willem Hekman
President ICMS

Daniele Jalla
President ICOM Italia

Albergo Garlandini
ICOM Executive Council

In a speech in May 2003, the then President of the Italian Republic, Carlo Azeglio Ciampi, said: '*It is in our artistic heritage, in our language, and in our creativity that our identity as Italians resides. The identity of a nation that was formed well before it was a state, and that represents its highest legitimation.*'
In the light of this statement, which we can all subscribe to in its entirety, the meaning and value of the work carried out by the Carabinieri Headquarters for the Protection of Cultural Heritage becomes immediately clear. Its work is to restore and ensure respect for the law in a sector that, more than any other, defines us as a people and as a nation, and that makes it our duty to look after and take care of a heritage unlike any other in the world. There is indeed no doubt that the density and wealth of the cultural heritage of Italy, with its constellation of museum and exhibition facilities dotted around the entire country, give credence to the current concept of a *extended museum*, as Italy is often referred to.
Safeguarding this astonishing heritage must therefore be seen as a duty towards a precious legacy, which has been entrusted to us by our past and by our history, and which is thus so inextricably bound to the national feeling and identity of our communities.
This is why the Carabinieri Corps immediately accepted the invitation to take part in the publishing project promoted by the Ministry of Cultural Heritage and Activities and Tourism and by the International Council of Museums to raise awareness of the issues, and to give tangible support and encouragement to museums and museum professionals in carrying out their task of safeguarding the artistic heritage with which they have been entrusted.
The handbook brings together and puts to good use the best of the experience built up by the Carabinieri Headquarters for the Protection of Cultural Heritage in its 46 years of work to protect artistic, historical and archaeological treasures.
As the first institution to understand the serious risk of impoverishment affecting a key sector of our country, the Carabinieri Corps has acquired an ever greater understanding of the sector, as can be seen in its decision on 3 May 1969 to set up a specialised department to protect the artistic and cultural heritage of Italy. This heritage is immense, and the few lines written by the General Command at the time of the institution of the first unit in Rome appear extraordinarily far-sighted today. The unit was assigned 'one officer, eight non-commissioned officers, seven enlisted men, one car and an 850 station wagon…'. These initial resources were ground-breaking and they opened up a path, which later proved highly successful, that made Italy the first country in the world to have a special police force to combat the increasing interest of the crime world in its artistic and cultural heritage. This came before the subsequent recommendation by UNESCO, which was signed in Paris in 1970, that all member countries should adopt special measures to protect their artistic assets.
After that time, the special Carabinieri department was gradually reinforced, leading to the creation of an organisation that was increasingly able to combat this particular sector of crime. Ultimately, in 1992, the Carabinieri Headquarters for the Protection of Cultural Heritage was set up, as one of the offices that collaborate directly with the Ministry of Cultural Heritage and Activities and Tourism.

Thanks also to the constant support of the Ministry, the Carabinieri Headquarters – which runs a central Operations Department, twelve Units and a Section distributed around the country – has achieved levels of absolute excellence both in Italy and abroad. This can also be seen in the crime prevention figures relating to the work it has carried out in the past two years: over 2500 people referred to the judicial authorities, 45 people arrested for crimes committed against cultural property, and the recovery of assets worth an estimated €700 million or so.
Special mention should be made of the *Database of Stolen Cultural Property*, which is an authentic show-piece of this special department. Launched in 1980, the database has for years been offering invaluable support to investigators, with 1,140,000 data sheets on art objects to be recovered and over 600,000 pictures of them. Advanced computer applications make it possible to compare them with works and objects that are found or subject to verification.
In its defence of our artistic heritage, the special department of the Carabinieri Corps also has the support of local Carabinieri stations, which are located throughout the country. Inextricable ties with local communities and in-depth knowledge of the territory mean that these stations have direct knowledge of the historical and artistic treasures in the most peripheral places and museums, and can help protect them in collaboration with the Sovrintendenze and the Ministry headquarters.
The Carabinieri Corps thus has a global commitment, which is of strategic importance in the defence of the artistic and cultural heritage of Italy, and it is a service that the Carabinieri carry out with great motivation and professionalism. As part of their crime prevention activities, the Carabinieri have worked to raise awareness among communities and to involve citizens as much as possible in safeguarding this precious heritage. With this in mind, the Carabinieri Internet site, *www.carabinieri.it*, has opened up to individual members of the public a model for cataloguing works of artistic value, and all users of the Web now have access to a selection of the most important objects listed in the *Database of Stolen Cultural Property*.
The project being presented today is inspired by the same principle: a publication that is intentionally pragmatic and schematic, to be made available to those in charge of museums; an instrument that is immediate and easy to use, providing expert indications that can help combat the theft of, and damage to, artistic artefacts, as well as assisting in tracking down stolen works.
This handbook outlines some of the chief instruments used in crime prevention. These include a whole range of preventive measures to counter the risk of theft, as well as a code of conduct to ensure the effective management of emergencies, which include theft, robbery, acts of madness and terrorist attacks.
In its work to help create this important publication, the Carabinieri Corps once again reaffirms its total commitment to the protection of artistic and cultural assets. This is a heritage handed down to us by history, which we are called upon to preserve in its entirety, so that we too can hand it on to future generations in all its richness and all its splendour.

Tullio Del Sette
General Commander of the Carabinieri Corps

PART ONE

AN INTEGRATED APPROACH TO CULTURAL HERITAGE SECURITY

To tackle the problem of security in places that constitute or contain 'cultural property', taking into consideration fire protection and structural, human and other aspects, it is essential to adopt an approach that is not based on any deterministic-prescriptive method. The drafting of predefined rules would indeed be difficult to reconcile with the need to cover a wide range of requirements: on the one hand there is the safety and security of objects and people, and on the other the enjoyment and conservation of the cultural heritage.
Without losing sight of the essential requirements and objectives to be met, it is necessary to adopt an approach that, in each circumstance, can adapt the security strategy to particular needs, also by resorting to equivalent security measures.
With the decree of 10 May 2001, which set out the ministerial guidelines on the technical and scientific criteria and the standards of operation and development of museums (*Atto di indirizzo sui criteri tecnico scientifici e sugli standard di funzionamento e sviluppo dei musei, Ambito V - Sicurezza del Museo*), already in 2001 the Italian Ministry of Cultural Heritage and Activities and Tourism considered risk analysis as the most suitable approach for creating an adequate security programme for cultural assets. [1]
This method has historically been applied to sites that run the risk of significant incidents, but it is universally valid and it constitutes a process that is capable of illustrating the probability of damage to a system. It also aims to gather the information required for documented and justified verification of the strategic decisions adopted in order to achieve the intended security objectives. It focuses on the assessment of 'risk', which is the probability of an event causing damage to persons or things. It is an approach that does not exclude risk, which is always inherent in any human activity, but rather one that aims to minimise it and make it compatible with the vulnerability of both the 'container' and the 'content', in that it is able to ensure an acceptable degree of security even in emergency situations.

A complete analysis thus starts with an assessment of the risks and ends with verification of the compatibility of the protocols envisaged for cases in which the risk (probability) becomes reality in the form of a negative event (certainty).
In particular, the analysis must include the following stages:

1. Risk assessment;
2. Finding compensatory measures, which modify and/or supplement those already in place;
3. Assessment of residual risks, i.e. the level of risk that continues to remain even after all the compensatory measures have been applied;
4. The identification of events and related scenarios linked to the residual risks;
5. The mitigation of events linked to the residual risks and the development of active protection systems;
6. Planning for and management of emergencies;
7. Operations to correct the strategy.

The implementation of all these operations is key to the 'security plan', which does not rely on measures dictated by laws and regulations, but which aims to achieve its objectives by focusing the areas of responsibility for risks on those where they are present, not only or not so much in terms of individual legal entities but also, and especially, in terms of the organisation as a whole, with all its strategic and operational rules.

Risk assessment

Risk analysis primarily involves an assessment of risks, which arise from the interaction of three factors:

– Dangers, i.e. objective sources of potential negative events that may cause damage to people or property;
– Exposure factors, linked to the frequency with which the event may occur;
– Vulnerability, which is the susceptibility of an object to be subject to damage caused by a negative event, both due to its own intrinsic characteristics and to the conditions of the system it is in.

In terms of risks caused by man it refers to the probability of occurrence of intentional actions such as attack, theft, robbery and vandalism.
The danger is that of a person who intends to carry out such actions, in order to steal or damage the cultural object.
The exposure factor depends on the type of risk being considered: the risk of vandalism and theft, for example, is closely linked to the number of people present (visitors, scholars, internal or external members of staff) who might come into contact with the object. Social and political conditions also influence the probability of an occurrence, and thus the exposure factor to vandalism and attack. Lastly, the prevalence of criminality influences the likelihood of robbery.
As regards the assessment of vulnerability, it is important to take into consideration the characteristics of the object in relation to the type of event being considered (small objects, for example, are more vulnerable to theft, while particularly important monuments and buildings are more vulnerable to attack). A careful analysis of the surrounding conditions also needs to be made, starting from the immediate context and moving out in concentric circles. Factors that influence vulnerability are:
– The urban and infrastructural features of the site;
– The presence of natural or artificial obstacles;
– The presence of buffer zones;
– The distance from police headquarters;
– The presence of adjacent buildings;
– The morphology of the site;
– The visibility of the complex and outdoor lighting;
– The presence of fences and gates;
– The architectural characteristics of the buildings and their planimetric/volumetric features;
– The presence of terraces;
– The types of casings, skylights and gratings;
– The presence of accessible underground tunnels;
– The presence of particular areas of risk (visitor reception areas, cashier's office, cloakroom and lockers, ancillary services, artwork storage areas, laboratories and workshops, temporary exhibition spaces, etc.);
– The state of active security installations;
– The presence of armour-plated doors, safes and display cases;
– The delimitation of areas and barriers;
– The attractiveness of the objects, also as concerns the ease of selling them on the illegal market;
– The symbolic image and importance of the objects.

Risk compensation

Once the risk has been assessed, the security plan must provide for risk compensation, which can be implemented by adopting preventive, passive-protection and organisational measures.
Preventive measures are those that relate to the frequency of occurrence of the events, discouraging criminal acts in various ways and on various levels. They include:
– Intelligence work carried out by the police;
– Territorial redevelopment;
– Measures to counter the illegal circulation of objects;
– The selection of security staff;
– Providing gallery surveillance staff with uniforms.
Passive protection measures are those that improve physical defences, reinforcing those that already exist. This category of measures includes:
– Gates and fences around the site;
– External defences of the buildings;
– Access to individual rooms;
– Safety locks;
– Protection of individual works (display cases, safes, windows, etc.).
Lastly, *organisational measures* are those that concern the management of the site in normal operating conditions. These include:
– Control and management of keys;
– Control of access by authorised personnel (maintenance staff, cleaning staff, office workers, scholars, etc.);
– The management and control of visitors;
– Updated cataloguing and inventories of works;
– The facility maintenance plan;
– Procedures for opening and closing the galleries;
– Management of the control room and protocols governing access to it;
– Patrol procedures;
– Education and training of security personnel.

Quantification and mitigation of residual risk

The quantification of residual risk consists in reassessing the risk in the light of the measures adopted during the compensation phase – in other words after the exposure and vulnerability factors have been reduced.
Should this residual risk prove to be unacceptable, then it needs to be mitigated by the introduction of suitable

Italian guidelines on the technical and scientific criteria and standards for the management and development of museums
Sector V – Museum Security

Introduction
The cultural heritage sector contains a number of issues involving the security of buildings and of their content, but also the safety of people within them (visitors and staff).
These issues are variously referred to as conservation, protection, restoration, work safety, fire prevention, etc, and they involve aspects of an environmental and structural nature, as well as usage, crime prevention and fire prevention. These are highly complex issues, and also very different one from the other. Furthermore, they run the risk of conflicting with each other if they are not approached in a coordinated and systematic manner. What is more, when we consider sites and buildings constructed over periods of time that can be measured in centuries, which cannot be altered or fitted with invasive installations, no predetermined solutions can be prescribed for all situations.
An approach that is primarily cultural, rather than regulatory, concerns safety and security in the very widest sense. Once the basic requirements that museum facilities must guarantee have been established, together with the objectives that must be attained in each case, what is needed is an integrated, pragmatic approach to form the basis for targeted risk analysis and consequent safety and security strategy. This includes preventive, protection and organisational measures capable of achieving these objectives, also during emergencies linked to the risk situations taken into consideration.
Risk analysis starts from the systematic collection of all data concerning each danger and all corresponding vulnerabilities, as well as exposure factors that contribute synergistically to the identification of individual risks in both qualitative and quantitative terms. The formulation of the security strategy starts from an understanding of these data and of the individual locations, because it is only by means of correct, consistent representation of what is being analysed that it is possible to draw up targeted measures of risk prevention, compensation and mitigation. With this approach, an acritical compliance culture is replaced by a culture based on concrete targets, on a case-by-case basis. Furthermore, in compliance with the latest EU directives and their transposition into national laws on security, the lines of responsibility concerning risks in the facilities where they are applied are based not on external regulations but on the organisation as a whole and on its strategic and operative rules for ensuring security, as well as, though to a lesser extent, on individual legal entities.
It is an approach that does not exclude risk, which is always inherent in any human activity, but that aims to minimise it and make it compatible with the vulnerability of both the 'container' and the 'content', in that it is able to ensure an acceptable degree of security even in emergency situations.

Technical standards
The museum must ensure environmental safety, structural safety, operational safety, crime-prevention security and safety in the event of fire, considering the problems of safety and security in a targeted and integrated manner.
The museum must strive to:
– mitigate any effects caused by the territorial ecosystem, by means of analysis, monitoring and remediation;
– protect, preserve and reinforce the place where the collections are housed against such effects;
– protect and preserve its collections, also in emergency situations;
– ensure the safety of the staff and visitors, also in emergency situations;
– ensure the safety of the rescuers in emergency situations.
The museum must ensure that the facilities comply with mandatory regulations (legal standards), implementing measures to ensure that the facilities satisfy the basic requirements (regulatory standards), and implement all essential measures for active, passive and organisational protection so as to give adequate guarantees concerning the maintenance of safety and security over time (security strategy). To achieve this, the museum must carry out a risk analysis to ensure that the safety and security strategy is suitable for the case in hand, also by resorting to new security measures.

integrated, active protection systems and of specially designed operations protocols.
Active protection systems consist of intrusion-detection, anti-theft, anti-assault and burglary-protection systems, as well as surveillance: in other words, the integration of people and technology. These systems need to satisfy reliability criteria, which means they must be suitable for the facility they are in, and must work promptly and effectively, as well as being available when required and not susceptible to sabotage. They must also be sufficiently automated and suitably calibrated to prevent false alarms, as well as being easy to service.
Some of these requirements will significantly influence the design of the system. In particular, the level of performance of the components is decisive for protecting against sabotage, and their reaction to environmental conditions must be designed to reduce the risk of false alarms to a minimum. The need for the system to be out of order for servicing also depends on choices made during the planning stage, when its

architecture and components must be selected for their ability to reduce the risk of faults to a minimum and to report any faults immediately so that they can be dealt with in the shortest possible time.
The level of automation, which is closely connected to the logistical and human resources present, is a matter to be examined separately. This is because it determines to what extent people need to interact with the technology. In order to manage a high degree of automation, the system needs to be well engineered, correctly constructed, skilfully installed and, lastly, subject to meticulous servicing in accordance with the maintenance plan set out in the initial project. In order to ensure effective interaction between man and machine, the greatest care must be taken in the selection and training of the operators.
Operation protocols manage the integration between the protection systems and the security and control staff, providing instructions for what to do in the case of an alarm.

Residual-risk management

Residual-risk management is implemented by means of *emergency planning and management*, with the primary aim of limiting its evolution and minimising its consequences.
Emergency planning means formulating an operational plan for its management. The emergency plan needs to provide detailed information about expected scenarios, the preparation of resources, the creation of flow lines for their operation and identification of those to be directly involved.
The more realistic and conservative the scenarios foreseen and the greater the expertise of those involved, the more effective emergency management will be. The emergency plan must also take into consideration relationships with the police. The reliability of 'deferred repression' intervention required of the police can only be ensured by joint planning but also, and especially, through the use of exercises to ensure the right degree of synergy and continuity between emergency management by internal staff and the actions of the police.
Emergency planning also has the task of giving those involved the skills they need to recognise and deal with such events. This means that they must be trained in such a way as to develop the technical and professional skills they need to interpret the symptoms of the emergency as soon as it arises and, especially, an ability to grasp the essentials so that they are able to bring the problems into focus and select the right information from the warning signs. The detection of warning signs by those in charge of management depends on their knowledge of the dangers and of their intrinsic characteristics, as well as on their ability to recognise any threat that may be present, but also on their capacity for correlating these dangers to the vulnerability of the environment.
Verification of compatibility consists in assessing the operability of the emergency plan, and thus also the consistency and practicality of actions to be implemented in the event of an emergency.
This verification, which is carried out both by simulations using mathematical models and by drills, will show if an emergency can be handled – in other words if the emergency plan provides sufficient solutions, and thus if the risk is 'acceptable'.
Should the outcome be negative, it is necessary to identify the measures required to improve the level of emergency management. Once this has been done, the above procedure needs to be repeated until a positive outcome is achieved.

[1] The Ministerial Decree was published in the ordinary supplement no. 238 to the *Gazzetta Ufficiale* no. 244 of 19 October 2001. The Ministerial Guidelines, the outcome of work by a group of experts at the Ministry, local authorities and universities, presided over by the then director general Mario Serio and coordinated by Cristina Acidini, has its legal basis in Article 150, para. 6 of Italian Legislative Decree 112/1998, later repealed.
Even though it is not mandatory in nature, it has been adopted as a reference by the scientific community in Italy, as well as by some regional governments that have used it as a standard for the recognition of local museums.

Crimes against cultural heritage and the role of the specialised Carabinieri department

Cultural institutes as potential objectives of criminal assault

Cultural assets, to which individuals and communities attribute different historical, artistic, symbolic and economic values, with levels of concern and sensitivity that can change over time, run the risk of being defaced, stolen, illegally exported or dispersed, in some cases forever.
The need to protect them and to allow present and future generations to enjoy them means that the owners and those responsible for their keeping must assess the ideal conditions for preserving them, wherever possible in those places (churches, buildings, archaeological sites, etc.) and settings where they were created or to which they were brought by historical circumstances or, if necessary, transferring them to places that are more suited to their conservation and display.
Our analysis will concentrate on cultural institutions, and on museums in particular, which tend to be less exposed to criminal attack but that, as we shall see, are by no means immune to risks.
As places whose mission has always been to preserve and show collections that are public or of public interest, museums have also increasingly become centres of active research, of education and of the dissemination of knowledge, of social gatherings and leisure activities. Conservation requirements overlap, which means that they often conflict with the equally important need to expand collections and to diversify the way they are used, by giving access to visitors during opening hours as well as participating in cultural initiatives and events.
The coexistence of these objectives means that the cultural heritage is not immune from problems that can undermine its survival.
Within the limits imposed by emergency management – which is designed to ensure the safety of visitors and staff – and within the limits imposed by security regulations, both the container and the content, and thus the building and its assets, must be adequately protected. This means it is necessary to devise and adopt suitable measures to prevent theft, robbery and damage, adapting security levels to suit the real value of the cultural heritage preserved.
As we saw in the previous chapter, it is certain that no approach to security, even though designed for a particular area, should fail to take into account a broader vision that considers all the other components of risk: protection against crime is one of the aspects – together with environmental and structural safety during use and in the event of fire – that constitute the concept of integrated security. [1]
The integration of all the various elements needs to be based on the complementary nature of the risk assessments and analyses of the sector, and on an awareness of the need to find a balance between interests that are very often in conflict one with the other. [2]
An exact perception of how real the threats facing our cultural heritage can be, and how vulnerable the museum system really is – despite the fact that museums have historically had a greater degree of attention to security against human hazards than we find in libraries and archives – can be gleaned from an analysis of the most spectacular crimes of recent years, of which we recall the methods adopted in a separate box. [3]
In terms of the importance of the museums targeted and of the masterpieces that have been stolen, these events are the tip of an iceberg of countless other 'minor' crimes by art thieves and mentally deranged persons who, in the past and unfortunately still today, have targeted places whose mission is to safeguard the cultural heritage.
An awareness that also these 'secure' places can be violated and an analysis of recurrent methods and conditions that facilitate criminal actions can help understand the greatest factors of risk and thus enable us to prepare actions and protocols to reduce the threat of attack and its chances of success.

Risk analysis and the search for vulnerabilities

Generally speaking, the weak points in the security system that are used to gain access to the homes of art and culture have been seen by the CC TPC Headquarters to involve:
– The structure and physical protection measures;
– Electronic protection and video surveillance measures;
– Security and surveillance staff;
– Access in general and, in particular, by users.

The critical aspects can also facilitate crimes even if the criminals are unaware of them. They may encourage offences even in those who have no intention of committing them, and they may prevent the offence from being rapidly detected and stopped, with evident repercussions on the potential that modern investigation methods offer for detecting culprits and recovering stolen property.

Remaining within the confines of our sector, those concerned can be divided into people who steal objects and people who damage them. The latter act under an uncontrollable impulse or in a premeditated manner, using the same entrances as other visitors and generally attacking only the work of art. Those who steal the object, in the case of theft as a planned objective, have two ways of getting their hands on it:
– by using violence or threats against the security or facility staff;
– by exploiting permanent or temporary gaps in the security system.

Both these possibilities may also arise during closing hours and during periods in which access is given to employees, to cleaning/maintenance companies, and/or to visitors.

Premeditated theft implies the acquisition by the criminals of information about the cultural facility and its activities. The choice of approach depends on:
– Weaknesses discovered by criminals when they examine the security system (on-site inspection);
– The time needed to overcome physical and electronic protection systems;
– The expertise required to overcome physical and electronic protection systems;
– The margin of risk that criminals are prepared to take in order to achieve their objective.

The approach adopted by criminals who are targeting an objective that contains property they want to get their hands on is based on a cost-benefit analysis.

The profitability of the operation is linked to the value of the object and its marketability. Except when an artefact is stolen to order or for the intrinsic value of its raw material (for example, aside from its cultural interest, the gold in jewellery can be melted down and the stones can be cut), the greater the importance and renown of a work, the harder it will be to market and, paradoxically, the lower the potential profit will be).

Costs, on the other hand, involve the economic outlay for the action and the risk of arrest. The former includes the quantity and cost of technical implements and the skills required to overcome the security systems, while the latter essentially depends on the time required to enter the site, take hold of the artefact and escape.

The task of the person in charge of the cultural site must therefore be to make both the cost-benefit ratio and the risks involved in the criminal action anti-economic. Dissuasion thus requires systems that:
– are suited to the importance of the site and the works it contains;
– oblige the criminal to make a considerable effort in terms of:
  - technology;
  - professionalism/specialisation;
  - the time required to get past the protection systems;
– enable the security staff and police to intervene more rapidly.

Robbery, on the other hand, involves the presence of persons inside the facility, who are subject to violence/threats so that the criminals can get hold of the objects. This solution is adopted when it is considered that the systems used to defend the site cannot be overcome using available means and skills, or will take longer to overcome in terms of preparation and action than the criminals' timetable permits.

Robbery is normally carried out by a number of people, who take part in the action with precise roles and tasks, while theft can also be carried out by an individual working alone:
– *During opening hours*, it is done by taking advantage of gaps in surveillance and in physical and electronic protection systems or by rules that allow for direct contact with the artefacts, also by means of deception (for example, by pretending to be authorised to transport the works for a temporary exhibition or for restoration away from the site);
– *During closing hours*:
  - Breaking in and entering the site from outside, getting past physical and electronic protection systems; deactivating the alarm system; bypassing the video surveillance system;
  - Remaining on the site after entering as a visitor and leaving the following day together with other visitors.

The human factor: strengths and weaknesses of the system

The human factor is crucial for preventing and dealing with emergencies: those who work in or for the institution are the greatest strength but also the greatest weakness of a security system.

Let us take a brief look at the strengths offered by human presence in institutions. If the front desk and surveillance staff – and, in more general terms, all members of staff – are loyal, vigilant, motivated and conscious of the importance of the tasks assigned to them, they can be better and more effective than any alarm system, for they can:
– Detect suspicious persons among the visitors;
– Notice unusual behaviour among users;
– Intervene before possible criminal action can be carried out;
– Raise the alarm and/or rapidly put an end to the criminal action;
– Immobilise the culprit/suspect and hand them over to the police;
– Identify the person guilty of the crime and provide information that can be used for identification;
– Prevent crimes by adopting a responsible attitude, not allowing forms of neglect that might convey an idea of impunity (also encouraging occasional thefts);
– Notice anomalies in the physical and electronic protection systems, promptly reporting them and checking that they are not due to criminal action.

Also the staff of cleaning/maintenance companies, who are authorised to enter the facility before and after public opening hours, may see situations that have not been noticed or properly assessed by the security services, and report them so that they can be investigated.

On the other hand, as has been found in many real-life cases, the presence of staff can also become a factor of weakness and risk. Security and surveillance staff, and indeed all staff permanently or temporarily employed on the site, can take advantage of their position and acquired knowledge to:
– Steal artefacts;
– Provide information that can be useful for detecting weaknesses in the facility (this information may also be revealed involuntarily and ingenuously, and may reach those interested in using it);
– Provide logistical or operational support, and facilitate criminal actions;
– Facilitate the commissioning of crimes as a result of disinterest and neglect: situations and behaviour that give the public a sense of neglect and a lack of interest in one's work and in the artefacts for which one is responsible may give the idea that one can steal freely and can also encourage those who are not criminals to act as though they were.

The staff of cleaning/maintenance companies, in particular, find themselves in a particularly favourable situation if they intend to steal, since they:
– have independent access to the facility and freedom of movement within it, and they work alongside the employees of the institution and, in some cases, become acquainted with and form relationships of trust with them;
– can access restricted or storage areas while carrying out their tasks;
– lastly, they have equipment that in some cases may be suitable for concealing stolen artefacts.

It can be speculated that, considering these aspects to be useful, criminals may attempt to take advantage of them, taking the place of staff to enter the site in order to act or to plan future actions.

Criminal analysis applied to the cultural heritage sector

An analysis of crimes at the national and international level has made it possible to identify the causes that often give rise to the interest of criminal groups in the cultural heritage sector:
– The lack of effective legislation for the protection of cultural heritage that can act as a deterrent and lead to a reversal of the trend in the criminal world;
– The profitability of the illegal trade in stolen artworks.

Criminals are also attracted to the cultural heritage sector by:

– The low standards of documentation on the provenance of works of art, which make it difficult to retrace the various sales in order to track down those who committed the crime;
– The ease with which national borders can be crossed;
– The speed of international transport, which is far greater than that with which *law enforcement* agencies exchange information and cooperate;
– The lack of effective monitoring of the provenance of works of art, which is often not carried out even by museums and private collectors (the '*no questions policy*').

Criminal organisations tend to choose foreign destinations for goods of illicit origin, since:
– It is considered that they make it more difficult to trace the objects and that they hamper investigations to recover them;
– It makes it more difficult to identify those responsible;
– An artefact of great value, which would be identified and seized in Italy, has a greater chance of reaching a final purchaser abroad.

In recent years there has been exponential growth in the art market, which has started to attract considerable economic investments and speculation (particularly in the area of contemporary art). The consequent increase in demand has paved the way for illegal trade in works of art, to which the rules of the market apply: the greater the demand, the greater the interest of criminals to respond to it, getting hold of those objects that, for their type and provenance, best suit the tastes of the moment or that are easiest to procure. The illegal market is particularly careful to exploit all situations (such as public order disturbances leading up to or resulting from political changes, armed conflict, lower standards of living, etc.), which bring about a lower level, or even an absence of protection in nations with a rich cultural heritage. This encourages the illegal removal of artefacts (through theft or the appropriation of archaeological finds, for example).
In the absence of a domestic market that can absorb artefacts that have been illegally obtained (due to a lack of potential clients with sufficient economic resources or to the risk of facing effective cultural heritage protection services, or quite simply to earn more), cultural objects – at least the more important ones – are taken abroad.
Once they reach the country of destination, the objects may also be put in storage, while awaiting the statute of limitations on the crimes and/or to put them on the market at the best time; with false documents/certificates of legitimate origin, they are then sold through the normal channels (galleries, auction houses, antique dealers).
The theft of Raphael's *Portrait of a Young Woman (La Muta)*, and of the *Madonna di Senigallia* and *The Flagellation* by Piero della Francesca, which were stolen from the Ducal Palace in Urbino in 1975 and recovered in Switzerland, showed how difficult it is to sell stolen masterpieces. If the theft is not made to order, the items that are most attractive to criminals are those of medium importance, which are neither recorded nor known (archaeological finds from illegal excavations, but also works of art from unregistered private collections) and are easy to sell.
On the one hand, illegal *and* legal sales channels (whether traditional or by means of e-commerce) have made it easier to export cultural artefacts and, on the other, more sophisticated methods have been adopted to:
– prevent the illegal trafficking of Italian cultural objects abroad by means of joint action between the CC TPC Headquarters, the Export Department of MiBACT and the Customs Office;
– recover those that have already been exported, through international commissions rogatory or through the cultural diplomacy of the Ministry of Foreign Affairs and International Cooperation.

By monitoring both the domestic and foreign markets on the Internet and through auction catalogues in Italy and abroad (also with the assistance of associations in the sector, foreign police forces and special corps in other countries), the TPC monitors legal sales channels, from which items illegally removed decades previously sometimes emerge. The presence of an Italian cultural artefact abroad revealed by this monitoring process or reported by international partners does not necessarily mean that a crime has been committed. Furthermore, it is not always possible to follow up and recover the property through criminal proceedings.
Unlike investigations which start from a crime committed in Italy and lead to the artefact, proving that it was stolen, the reverse process involves investigations that need to establish:
– if the asset is registered in the TPC database as stolen;
– its rightful ownership;
– if it has been certified as of cultural interest;
– the date when the theft took place;
– the date of the illegal export.

It is necessary to know the rightful ownership of the cultural asset and the date of the last criminal event involving it in order to establish the channel to be followed up for its recovery.
To put it simply, when the investigations are still under way or the crime is not yet statute-barred, the Italian judicial authority requests an international rogatory in order to involve its opposite number in the country where the artefact has been found, to carry out special investigations and to secure its seizure. The possibility of the probatory recovery of the work of art and its repatriation depends on whether or not this request is accepted.
Outside of these cases, or concurrently with the action taken by the judicial authority, the recovery of assets which are part of the national cultural heritage can also acquire extra-judicial connotations with intervention by MiBACT, which has the collaboration of the Ministry of Foreign Affairs and International Cooperation (MAECI).
In these cases, the CC TPC Headquarters has provided expert support, which has made it possible, through negotiation, to obtain the cooperation of the 'temporary owner' in order to recover precious Italian artefacts. The greatest successes of these procedures include the repatriation of:
– The *Cult Statue of a Goddess (Venus of Morgantina)*, a statue of the fifth century AD, which was stolen from the Morgantina archaeological site near Enna and sold to the Paul Getty Museum in Malibu (USA). The return of this archaeological masterpiece to the Museum of Aidone, in the province of Enna, was a watershed moment in cultural policy and an assertion of international customary law;
– The *Tavola Doria*, a sixteenth-century oil painting on wood showing *The Fight for the Standard* (a detail of The Battle of Anghiari, which Leonardo, to whom many scholars attribute the panel, had started to paint in the Hall of the Grand Council in the Palazzo Vecchio in Florence). Illegally exported from Italy, the panel was recovered in Geneva.

The role of museums in preventing the illegal trafficking of cultural artefacts

Museums can play an active role in preventing and combating illegal trafficking.
Particularly the institutions of countries that 'import' culture, which have considerable resources to expand their collections, have often been the preferred recipients of artefacts of illegal provenance, and their directors have been some of the principal interlocutors (whether direct or indirect, unaware or aware) of illegal art traffickers.
Whether out of negligence or out of a desire to include a particular work in their own collection – and in some case even due to ties with the illegal market – a museum director who purchases goods of doubtful provenance 'pollutes' the heritage of the museum with works forcibly uprooted from the setting where they came from or were made. This goes against the widespread conception that the value of a cultural asset is not only, or at least not so much in the 'beauty' that it expresses, but in the significance of the civilisation it represents. It also indirectly encourages the never-ending spiral of illegal art trafficking: from crimes that lead to the supply of artefacts (theft and clandestine archaeological excavations) to those that are carried out to market them (handling of stolen goods, laundering and illegal exports).
As we shall see in the next chapter, the *ICOM* Code of Ethics (2009) requires the governing bodies of museums to be extremely vigilant and to make every effort to avoid the acquisition of any objects of illegal provenance, as well as hindering the work of traffickers, who are forced to perform complex operations, also involving others (in order to obtain false expertise, for example, or false declarations of ownership and provenance, or to carry out partial alterations and retouching to prevent identification), with greater exposure to market and police controls.
Checks and verification must also be carried out, with the same care, on unpaid acquisitions, since donations and bequests may also involve artefacts that, unknown to the owners, may be of illegal provenance but that, even generations later, may be found in the *Database of Stolen Cultural Property* (*'Banca dati dei beni culturali illecitamente sottratti'*) of the CC TPC Headquarters or in that of Interpol.
Due diligence in acquisitions inevitably involves consulting databanks: that of the TPC can be consulted directly on the www.carabinieri.it portal, which includes a selection of the most important stolen artefacts, or, for a search through the entire database, by formal request addressed to tpcsed@carabinieri.it. It is however necessary to bear in mind that a negative outcome of such investigations does not fully exclude the illegal

provenance of items, since they might come from criminal actions that:
– have not yet been communicated to the TPC by the police department to which the theft was reported;
– have been reported or described only sketchily, and without photographic documentation;
– involve illegal excavations.

The greatest care must be taken when the acquisition involves archaeological finds, because if they come from unauthorised sites, they will not be found in the database of stolen cultural property.

The cultural heritage that is concealed underground or on the sea floor is unknown, and remains that way until the nations or authorised institutions and bodies carry out excavation and research campaigns or until they are found by tomb raiders or sunken-treasure hunters. In the case of such objects, useful information on their lawful ownership and the appropriateness of their acquisition can be found in:
– certificates and declarations of provenance;
– the price;
– the methods and certificates of shipping/delivery, purchase and payment.

The provenance of items from countries where socio-political conditions are compromised, or which are claimed or can be proved to be from other countries but with cultural roots that are similar or common to those of the area at risk all require further investigations that can only start with consultation of the ICOM *Red List – Liste Rouge* of endangered cultural objects (the Red Lists Database) and the involvement of UNESCO.

Also bibliographic and documentary assets must be analysed by the potential purchaser, who needs to pay particular attention in view of the extremely critical nature of their protection. The theft of rare volumes and individual documents, sheets and drawings from archives and libraries is facilitated by the way that they are used (direct access by users), by the absence – in many minor centres – of systems that warn of items removed without authorisation, of the scarce effectiveness of monitoring systems in the storage areas and in the reading rooms where researchers consult archive items (registers, envelopes, etc.) and often have direct access to the library collections on open shelves.

The presence of dry or ink stamps, inventory or catalogue marks, and the removal, abrasion or deletion of portions of the supports where they are usually placed, are all elements that suggest that the item comes from a cultural institution and may have been removed illegally. Even though they do not unambiguously prove that the provenance is illegal, these data must be carefully verified.

The work of the Carabinieri Headquarters for the Protection of Cultural Heritage in Italy and abroad

The Carabinieri Centre for the Protection of the Artistic Heritage (*Nucleo Carabinieri Tutela Patrimonio Artistico*) was set up on 3 May 1969, one year before the 1970 UNESCO Convention of Paris, which among other things invited member states to set up special services for the protection of their national cultural heritage, These were the years when Italy, which was experiencing considerable economic expansion, was being attacked by an intensification of clandestine exports of cultural objects, which were being stolen or excavated illegally and entering collections right around the world.

In order not to stand by and watch as the cultural heritage was dispersed, the General Command of the Carabinieri Corps had the idea of assigning some military personnel to safeguard Italian paleontological, archaeological, artistic and historic treasures.

The first operations to bring national and international fame to the Specialist Unit of the Carabinieri Corps date back to the 1970s.

Today the Headquarters, which in 2001 acquired its current title (*Comando Carabinieri per la Tutela del Patrimonio Culturale*) and became an office that collaborates directly with the Ministry of Cultural Heritage and Activities and Tourism, now has 270 qualified staff who have attended specialist courses. As the mechanisms of criminality have changed in the sector, the TPC has responded by adapting its strategies and perfecting its operational and organisational approach. The present organisation consists:
– at the central level of a Command Office that provides decision-making support for the Commander in his work of managing, controlling and coordinating the institution's activities in Italy and abroad. One of its divisions is the Data Processing Division (*Sezione Elaborazione Dati*), which manages the *Database of Stolen Cultural Property*;
– and, also at the central level, an Operations Unit (which is in turn divided into Antiques, Archaeology, Forgery and Contemporary Art sections) with criminal investigation and operational coordination tasks which it carries out right across the country, particularly in the case of more complex investigations;
– there are nine regional and interregional units and local sections in Ancona, Bari, Bologna, Cosenza, Florence, Genoa, Monza, Naples, Palermo, Sassari, Siracusa, Turin and Venice.

The Database of Stolen Cultural Property

Ever since the 1980s, the TPC has been operating a *Database of Stolen Cultural Property*. Starting with the digitisation of the photographic library on paper, which was set up by the first cultural heritage protection unit in 1969, the Database has seen the gradual adoption of infrastructure and constant input. Thanks to the flexibility of its applications, it has now reached a considerable quantity of data processed (over 5,800,000 objects and almost 600,000 images) and has achieved universal acclaim as the world's largest and most effective database devoted to the protection of cultural assets.

The TPC Database receives all the information concerning crimes involving cultural assets that are reported to the units of the Carabinieri Corps by other police forces, as well as by accredited institutions in Italy and abroad.

When a citizen reports the theft of a cultural artefact, whatever office he or she makes the report to, the descriptions and photographs of the stolen items, together with information about the criminal event, are used by the police to fill in the TPC Event Form (*Schede Evento TPC*). This is then sent to the Data-Processing Section of the specialised Headquarters of the Carabinieri Corps where information about the event, the items and the consequent investigations are inserted into the computer.

In view of the importance of the descriptions and photographs for detecting stolen goods, and thus the possibility of retrieving them and returning them to their rightful owners, the TPC uses and publishes an 'Object ID'. This makes for cataloguing that is rapid and accessible to anyone thanks to the immediate availability of the data: citizens can download the form or fill it in online at www.carabinieri.it in the event of theft, with all the data required for effective reporting, thus helping regain possession of the stolen goods.

The second channel of input into this Database is that of investigations by the criminal police, monitoring of commercial activities, fairs and markets in the sector, carried out by the TPC, as well as requests for verification and enquiries by qualified trade associations: when information about the cultural object is searched in the Database in order to assess if it is one of those being sought, the image of the object is automatically registered, together with significant information about it.

With the processing of statistics, the input of and search for works of art and people, and the use of forms to be filled in for investigations (visual searches, graphic representation of relationships and data), the TPC Database has become an essential instrument in the search for cultural artefacts involved in crimes. It is an extraordinary instrument for investigations and also a source of information for understanding the evolution of crime trends in order to draft effective investigation procedures.

Thanks to this experience, the TPC is now considered as a model for specialised police forces around the world and it is at the head of the *Protection* SYstem for the Cultural HEritage (PSYCHE), a project funded by the European Union, which updates and implements the Interpol Database of Stolen Works of Art. With a significant upgrading of hardware and software, this will make it possible to:
– computerise and standardise the flow of information concerning reports of cultural objects from member countries that need to be found;
– implement the database, based on the TPC model, with advanced research tools and automatic comparison of images.

The need is felt by the European Union (as agreed upon by Austria, Belgium, Bulgaria, Cyprus, Estonia, France, Germany, Greece, Hungary, Malta, the Netherlands, Slovakia, Slovenia, Spain and Sweden) to standardise the registration of items stolen in a member country and to make it immediately effective.

The timing and quality of the information available plays a decisive role in intercepting illegally exported goods before they reach their destination and, potentially, disappear into some private collection.

The need to keep abreast of the times in fighting crimes against the cultural heritage has also led to the need to increase the capacity for interaction with citizens, and this involves finding and experimenting new instruments.

Lastly, the iTPC app has been created for latest-generation mobile devices (smart phones and tablets), which make content of great cultural interest openly

available, allowing everyone to make their own contribution to the fight against crimes against art and assisting the TPC by reporting works of dubious origin. The application provides the following services:

– Research bulletins published by the TPC with information on the most important stolen cultural heritage artefacts;
– Visual searches that allow one to see, in real time, if an artefact photographed by the user is being searched by the TPC. This is done by comparison with the images stored in a dedicated database (with a selection of the most important items in the database of stolen cultural artefacts);
– The creation of an Object ID;
– The ability to find information on how to contact and reach the closest geo-localised TPC department.

With this app, the TPC has sought to open its doors to the world, offering its own data transmission services with the highest level of portability and circulation.

Monitoring of security systems: inspections in cultural institutions

Of the many activities provided by the TPC, great importance is given to inspections of cultural facilities, not only after crimes have been committed within them, but also with a view to preventing the risk of crimes occurring. This preventive work, as well as being one of the institutional tasks assigned to the Headquarters by the Ministerial Decree of 5 March 1992 by the then Minister for Culture and the Environment, [4] is consistent with the commitment of the *Special Permanent Commission for the Safety of the National Cultural Heritage,* which was set up by a similar Ministerial Decree of 18 May 1992. [5]

The task of checking the safety systems and installations led in January 1994 to the creation of a more flexible and immediately operational instrument within the Commission itself. This is the Operations Unit for the Protection of the National Cultural Heritage (*Nucleo operativo per la Tutela del Patrimonio Culturale Nazionale*), which is entrusted with all the inspections. Active participation in the work of the Commission and its various ramifications, as well as in that of the Operations Unit has further expanded the experience of the Carabinieri TPC in terms of its risk analysis and advisory services for finding the best ways to reduce the possibility of criminal actions. The policing of criminal activities carried out by the Headquarters subsequent to theft, damage and robberies involving objects housed in museums, libraries and archives, starts with an examination of the scene of the crime, in order to understand the *modus operandi* of the criminals. This constitutes a unique corpus of knowledge that can be used to detect areas of vulnerability in crime-prevention systems.

With this in mind, while the Technical Service for the Safety of the National Cultural Heritage (*Servizio Tecnico per la Sicurezza del Patrimonio Culturale Nazionale*) (1997) and the Working Group for the Protection of the National Cultural Heritage against Natural Hazards (the *Gruppo Operativo per la Salvaguardia dei Beni Culturali da Rischi Naturali* – the forerunner of today's National Crisis and Coordination Unit, UCCN-MiBACT, which was set up in 1999), have gradually taken over the technical and operational duties of the *Special Permanent Commission*, the TPC has continued with its verification and monitoring within MiBACT institutions and in other museums, archives and libraries in Italy.

With its nationwide reach, it works constantly throughout the country, making periodic visits together with those responsible for the facilities/areas. The aim is to examine the level of security in order to lower the risk of criminal activity.

In order to improve its operations in the sector in terms of both quality and quantity, the procedures and methods of documenting the work carried out during the visits were further refined in 2011. This includes guides and reference materials for the operational staff, summary reports on the inspections and a register of inspections, all of which are designed to help assess the state of security of each museum in a more intelligible manner. [6]

Even though these are not declarations or documents that certify the level of security of the facility, the results of these monitoring activities are sent to the authority to which the institution reports, so as to ensure an effective flow of information and true cooperation between all those involved.

Since November 2011, after signing a declaration of intent as part of 'initiatives to promote and safeguard the cultural heritage', an assessment of the ability of the security systems in the facilities to combat the risk of crime can be carried out in the museums themselves, also with the cooperation of ICOM.

[1] Paolo Marchini, *'Il progetto sicurezza: obiettivi, requisiti, analisi e gestione dei rischi'*, in *Notiziario del Ministero per i Beni e le Attività Culturali*, ed. Ufficio Studi, nos. 62-64, pp. 140-143.

[2] *Ibid*, p. 141: totally different needs of security and safety; quite unpredictable and unexpected in the design phase, which dates back to historical ages that are very distant from us and from our technological civilisation; the inadmissibility of invasive structural operations and installations that would distort the artistic and historical nature of the building.

[3] The way these crimes have been perpetrated is not based on information from official investigations, but from news circulated by the media.

[4] [...] The use of expert staff is deemed necessary in view of the fact that to perform the tasks entrusted to the Ministry concerning the safety of the cultural heritage and the supervision of authorities, institutions and associations, as well as the promotion of the operations required for the protection of the historical, artistic and environmental heritage as per Article 2 of Decree Law no. 657 of 14 December 1974.
Art. 1 – The Carabinieri Headquarters for the Protection of Artistic Heritage (TPA) is hereby set up within the Ministry for Cultural and Environmental Heritage.
Art. 2 – The officers, non-commissioned officers and Carabinieri of the Carabinieri Headquarters for the Protection of Artistic Heritage are delegated to perform the duties of the Ministry for Cultural and Environmental Heritage for all matters concerning:
– The security of cultural assets;
– The acquisition of information that may help promote such initiatives as are necessary for the protection of historical and artistic property (as well as for the protection of environmental assets).

Art. 3 – For matters under the authority of the Ministry for Cultural and Environmental Heritage, the Carabinieri for the Protection of the Artistic Heritage also perform activities of prevention and law enforcement for the protection and preservation of the historical, artistic, cultural and environmental heritage as well as the recovery of cultural assets and scientific and educational materials relating to such assets, as well as performing other activities that the Ministry deems necessary for carrying out the duties assigned to it by law.

[5] Officers of the Carabinieri Headquarters have been called in to take part in the working groups into which the Commission was divided ever since its first meeting on 24 June 1992, (1. Courses for security surveillance staff; 2. Security systems; 3. Data sheets; 4. Staff; 5. Export Offices; 6. Archaeological heritage) with the specific commitment of the group set up to verify the security systems of the installations of the Ministry and the Church Heritage group set up on 21 April 1993, with the skills required to deal with the following issues: cataloguing or inventorying of assets, which may need to be rapid; installation of alarm systems; surveillance systems and passive protection measures; storage facilities for works of art.

[6] For the elements subject to verification, see the survey form in the Appendix: Inspections register.

The institutional tasks of the Carabinieri Headquarters for the Protection of Cultural Heritage

The pre-eminence of the Carabinieri Corps in the protection of cultural heritage has always been guaranteed, and it was recognised by the Italian Legislative Decree of 5 March 1992 concerning the allocation of specialist units. This was confirmed by the Decree of the Minister of the Interior dated 28 April 2006, which made the TPC the centre for information and analysis for all police forces and international organisations.

Working throughout Italy, in consultation with all members of the Carabinieri Corps and the police forces, together with the territorial divisions of the Ministry of Cultural Heritage and Activities and Tourism (MiBACT), the TPC works to protect and safeguard cultural property through:

– Specialised investigations to identify the perpetrators of crimes committed against the cultural heritage (theft, receiving stolen goods, unauthorised archaeological excavations, counterfeiting, forgery, etc.) and the recovery of stolen property;
– Monitoring of archaeological sites on land and at sea, as well as areas of scenic interest and UNESCO World Heritage sites, also with overflights and coordinated services involving mounted units, patrol boats and underwater units of the Carabinieri Corps;
– Monitoring commercial activities in the sector and fairs/markets where cultural assets are bought and sold;
– Verification of the crime-prevention measures adopted by museums, libraries and archives;
– Monitoring of auction catalogues and e-commerce;
– Management of the Database of Stolen Cultural Property;
– Expert advice for MiBACT (central and local departments);
– Participation in the National and Regional Crisis and Coordination Units (*Unità di Crisi e Coordinamento Nazionale e Regionali*), providing assistance for the salvaging and safekeeping of works of art and cultural property in areas of Italy affected by natural disasters.

The areas in which the Headquarters works at the international level are those of:

– The recovery of Italian cultural assets that have been illegally exported;
– The recovery of cultural assets of other nations illegally exported to Italy or other countries, or found in the nation to which they belong;
– Specialised training for magistrates, the police, Customs and the ministries of culture of foreign countries;
– Collaboration with international organisations for the protection of cultural assets and police cooperation;
– Specialised support for Italian contingents in peacekeeping operations.

Significant examples of criminal events

Vatican City, *1972 – Michelangelo, Pietà: damage*
A mentally ill man climbed over the balustrade of the first chapel in the Basilica of St Peter's, took out a hammer hidden under his raincoat and hit the sculpture fifteen times. The *Pietà* suffered very serious damage: the blows caused the detachment of about fifty fragments, breaking the left arm and shattering the elbow, as well as almost destroying the face, the nose and the eyebrows. Since then, the *Pietà* has been protected by a special wall of bullet-proof glass.

Urbino (Perugia), 1975 – *Piero della Francesca, The Madonna of Senigallia and The Flagellation of Christ; Raphael, Portrait of a Young Woman: theft*
Taking advantage of scaffolding put up outside the Ducal Palace for restoration work, professional thieves reached the roof garden, from which they used a ladder to reach the window of the gallery known as the Sala degli Angeli. After breaking the glass, they entered the museum and, using false keys, managed to reach the rooms of the Scuola del Libro.

Otterlo (the Netherlands), 1988 – *Vincent Van Gogh: Three works, including the first version of The Potato Eaters – theft*
The alarm system in the Kröller-Müller Museum was linked to the police station. The agents noticed, when the alarm came in, while the two custodians failed to notice anything.

Boston (Massachusetts, USA), 1990 – *works by Johannes Vermeer, including The Concert: robbery*
Two men, dressed in police uniforms, entered the Isabella Stewart Gardner Museum. After disarming the guards, they took away works by Rembrandt, Vermeer, Manet and Degas.

Amsterdam (The Netherlands), 1991 – *works by Vincent Van Gogh including Sunflowers: robbery*
Two armed, masked men entered the Van Gogh Museum and stole twenty masterpieces.

Rome – Galleria Nazionale d'Arte Moderna, 1998 – *Paul Cézanne, Le cabanon de Jourdan; Vincent Van Gogh, The Gardener and L'Arlesienne: robbery*
The criminals entered the gallery as normal visitors but then hid and remained behind after closing time. Taking advantage of the start of the night shift, they attacked the watchmen and, using their weapons, forced them to turn off the alarm systems. The robbers took away three paintings and managed to cover their traces, helped by the complicity of someone within GNAM.

Rome – Capitoline Museums, 1998 – *Henri Matisse, The Japanese Woman, Pianist and Checker Players and Zorah Standing: damage*
Three paintings by the French artist were damaged during a school visit.

Stockholm (Sweden), 2000 – *Pierre-Auguste Renoir, The Young Parisienne and Conversation, and Rembrandt, Self Portrait: robbery*
Five minutes before closing time, a man pointed a gun at the guard at the entrance to the Nationalmuseum Before the eyes of many frightened visitors, two accomplices, who had entered as normal visitors, removed the paintings and managed to escape with two Renoirs and a Rembrandt, using a small boat moored at the quayside.

Asunción (Paraguay), 2002 – *five paintings, including La Virgen y el Niño by Bartolomé Esteban Murillo: theft*
Unidentified persons penetrated the National Museum of Fine Arts by digging a thirty-metre tunnel from a shop next door to the museum. They entered the room where the five works of art were on show, during the most important exhibition in the history of Paraguay's National Museum. With no alarm systems or security services, the incursion was quite relaxed.

Amsterdam (The Netherlands), 2002 – *Vincent Van Gogh, View of the Sea at Scheveningen and Congregation Leaving the Reformed Church at Nuenen: theft*
The thieves entered through the glass roof of the Van Gogh Museum: the police found the rope and ladder used by the criminals to enter the museum and, on the first floor, the broken window from which they got out with their precious loot.

Drumlanrig (Scotland), 2003: *Leonardo da Vinci, The Madonna of the Yarnwinder: theft*
Taking advantage of an guided tour of the castle, two thieves overwhelmed the guide, took hold of Leonardo's masterpiece and, with the assistance of two accomplices, fled the scene in a car.

Oslo (Norway), *2004 – Edvard Munch: The Scream and Madonna: robbery*
In broad daylight, two armed people overwhelmed the museum staff and removed the two masterpieces.

Novi Sad (Serbia), 2005 – *four paintings, including Seneca by Rubens and Rembrandt's Portrait of His Father: robbery*
Two armed men broke into the museum and, after tying up two employees, stole one Rubens, one Rembrandt, a painting by Pier Francesco Mola and a work by an anonymous sixteenth-century German-Dutch artist.

Rio de Janeiro (Brazil), 2006 – *works by Monet, Dalí, Matisse and Picasso: robbery*
Four armed bandits entered the Museu da Chácara do Céu, which has one of the finest art collections in Brazil, on the afternoon of Carnival Friday, while the celebration of the carioca carnival was getting under way nearby. The burglars knew about the only way of escape, which was along a tortuous path through the forest. The four thieves entered as visitors and used their weapons to make the watchman surrender, deactivated the video cameras and alarm systems, and stole Salvador Dalí's *The Two Balconies*, Pablo Picasso's *The Dance*, Henri Matisse's *The Jardin du Luxembourg*, and a *Marina* by Claude Monet, cutting the cord that suspended them from the ceiling. A book of engravings of *Bulls* by Picasso, illustrating poems by Pablo Neruda, was stolen from a showcase. The museum was open but with fewer personnel, because of the carnival.

Sao Paulo (Brazil), 2007 – *Pablo Picasso, Portrait of Suzanne Bloch; Candido Torquato Portinari, O lavrador de cafe: theft*
Three thieves entered the Art Museum through the main door, while an accomplice waited outside. They stayed in the building just for the time it took them to remove two important paintings. None of the doors had alarms. The security cameras caught the criminals on film, but not the detachment of the works from the wall.

Paris (France), 2007 – *Claude Monet: Le Pont d'Argenteuil: damage*
During the White Night in Paris, vandals broke into the Musée d'Orsay and gashed the painting by Monet.

Zurich (Switzerland), 2008 -*Works by Monet, Degas, Van Gogh and Cézanne: robbery*
Three masked bandits with revolvers entered the E.G. Bührle Collection shortly before closing time. While one criminal held the watchmen at gunpoint, the accomplices removed four canvases from the galleries. They managed to escape by car, covering their tracks.

Cairo (Egypt), 2010 – *Vincent Van Gogh: Poppies and Daisies: theft*
Criminals used a cutter to remove the canvas and then, hiding the work under their coats, walked out of the museum without being noticed. The theft occurred during museum opening hours, without setting off any alarm and without being caught on camera. All the paintings, including works by Manet, Renoir and Gauguin, were protected by alarms that were not in working order. There were 43 video cameras in the galleries, but only 7 of them were on, none of them facing the paintings.

Paris (France), 2010 – *Works by Leger, Picasso, Matisse, Braque and Modigliani: theft*
A hooded thief entered the *Musée* d'Art Moderne in Paris by removing an external window, breaking the chain that fastened the grating (between the outside and inside windows) and then opening the inside window. Once he had entered, he cut the canvases with a utility knife and then rolled them up and put them in a backpack. He escaped by the way he had entered. The surveillance cameras recorded every moment of the burglary, showing how easily it had been done. The alarm system had been deactivated due to frequent false alarms. The investigations showed that the theft only targeted the painting by Leger, and that it was stolen to order. The burglar had taken advantage of the favourable situation, brought about partly by the fact that the galleries were not closed, so that he could steal the other masterpieces undisturbed.

Rome (Italy) 2013 – *Nineteenth-century reproductions in gold and precious stones of Etruscan jewels: theft*
Having opened a gap between the bars of an external grating, three hooded persons entered the Villa Giulia complex and went to the museum display on the first floor. They then went to the gallery of modern goldwork of the Castellani Collection, smashed the display cabinets with a hammer, took the priceless jewels and made their getaway using smoke bombs.

Milan (Italy), 2014 – *Three paintings on wood by an anonymous fifteenth-century Cremona artist*: *theft*
The burglary at the Castello Sforzesco exploited the lack of video cameras and alarm sensors in the area where the works were on display, as well as the lack of a cloakroom or lockers, so visitors could enter the galleries with backpacks and handbags.

The issue of crime-prevention security in the *ICOM Code of Ethics for Museums* [1] refers not only to a museum's obligation to preserve its own collection, which is protected by international law and belongs to humanity, but also to its commitment to adopt proper measures to combat the illicit trafficking of works of art. The Code calls attention to and presses for necessary diligence in combating the various forms of illegality that the museum may find itself having to deal with as part of its institutional activities. These range from the possibility of theft, robbery or acts of vandalism to the acquisition, whether against payment or free of charge, of items from illegal trafficking, to the temporary storage of recovered objects of unknown or illegal origin.

The ICOM *Code of Ethics for Museums* highlights the importance of the competence and experience of museum professionals in carrying out the tasks entrusted to them and the need to ensure continuous training and professional development in order to maintain operational effectiveness. As the national charter of museum professions (*Carta nazionale delle Professioni Museali* [2]) recalls, staff play a key role in the life of an institution because it is on their professionalism, training and skills that the implementation of the mission, in the form of programmes and actions, depends. In other words, the present and the future of museums, safeguarding cultural heritage, is directly linked to its material safety.

One fundamental prerequisite for security in a museum, as well as in a library or archive, is to have professionals with specific skills and experience, who work responsibly in an integrated and collaborative manner. As has been pointed out, the essence of the security plan is not that of applying regulatory requirements, but rather an organisation that is responsible not only to legal entities but also to the set of strategic and operational rules that can be implemented, first and foremost by the staff of the museum that establishes and applies them.

The approach required to ensure the protection and safeguarding of cultural assets is that of considering security within the cultural institution as an issue that affects all museum professionals, from the highest level, of those who have direct responsibility for the artefacts, to all the various workers. Also in the case of a special organisation devoted to the security and safety of the objects and museum staff – which is very rare in Italian museums – it is essential that such an organisation should not be considered as a self-contained unit, but rather as an integral and integrated part of the museum's organisational system.

Security is a key issue and cooperation is a necessary operational approach. It is fundamental during the analysis and planning stages, and as well as in implementing preventive measures and, more than ever, in the delicate phase of dealing with an emergency, which is never to be underestimated.

When drafting its *Security and Emergency Plan*, [3] which is of fundamental importance for any museum, risks must be analysed, assessed in all their possible scenarios and submitted to all those involved in the organisation, from the director to the attendant, so that they can be mitigated. The result will be to spread the principle of shared responsibility and greater awareness among the staff. [4] Training and continuing learning must be a priority as a short- and long-term investment.

One final note: the best evaluation always leaves a margin of potential risk, and an assessment of the institution's Security and Emergency Plan by external experts can be of great assistance in this.

The issue of crime prevention is one of the aspects that the institution needs to include in its own risk analysis through its Security (prevention stage) and Emergency (residual-risk management stage) Plan, fully aware that the confidentiality of the information and the immovability of the objects often conflicts with the ability to remove them rapidly to safety in the event of an environmental emergency.

Expertise in the security of dedicated places like museums cannot be just generic. In Italy in particular, it must be specialised, not only due to the characteristics of the cultural objects they contain but also because of

the precious but vulnerable containers themselves, which more often than not are authentic artistic gems, the use of which as museums makes them even more fragile in terms of security. As we shall see, even if this specialisation is not acquired through targeted training courses, it must at least be ensured by continuous learning courses on the subject.
In emphasising the need for security to become a mental attitude in all museum staff by means of integration between all the various professionals, the particular responsibilities and activities of each function are recalled below. [5]

Decision-maker (owner, governing body)

Even though not a professional figure, the decision-maker – whether direct, as the owner, or indirect, as the administrative representative – is the recognised manager, not only morally but also legally, of events that might cause harm to, or even the disappearance of, the museum's artefacts. [6] It is the task of the decision-maker to ensure special and constant attention, providing the necessary investments over time so that the institution can always guarantee the protection of its facilities and artefacts.

Director [7]

The key figure in the institution, he or she has the highest responsibility for all that concerns the protection of the cultural assets that, in their various ways, are present in the museum. The director is also required to assess the true provenance of the items, particularly in the case of works from foreign cultural settings. [8] Since museums are often the target of art traffickers, the director must exercise extreme caution, reconstructing the original location and all the commercial transactions involving items submitted for acquisition. The same care must be exercised also in the case of bequests and donations. The provenance of all items that come to the museum must be ascertained, particularly in the case of archaeological finds, which may well come from clandestine excavations or sites in the sea that have not been reported to the authorities.
In accordance with the *ICOM Code of Ethics for Museums*, the director must be particularly careful in those cases in which his or her institution provides expertise, in the awareness that it is responsible for influencing the art market.
Should there not already be one, the director must see to the immediate drafting of a *Security and Emergency Plan* for the museum, ensuring that crime-prevention security is treated as a sector in its own right. When drawing up the Plan, after careful analysis of the risks – which involves making use of the particular skills of the museum staff or, in their absence, of external consultants – the director must assess the current situation, plan intervention on the basis of priorities and ensure suitable investments both for making the works safe and for annual training of the operators.
The director must follow up the Plan with an *Emergency Manual* and, together with the security manager, draft a programme of exercise drills. [9] The director must never underestimate any reports or alarms from his or her staff.
As the key figure in the institution, the director must be involved by the governing authority or board of trustees in all activities and operations that concern the museum, particularly when deliberating on maintenance and redevelopment work, and on upgrading installations or displays, to ensure that such operations comply with the levels of quality required, that they do not interfere with the everyday life of the museum, and that they do not jeopardise the safety of the objects or people while work is being carried out.
The director must also be informed of the whereabouts of all documentation, whether confidential or otherwise, of the Security and Emergency Plan, of the keys and access codes, and of all other aspects concerning the life of the institution.
Lastly, the precise responsibilities assigned to the director should be accompanied by a particular sensitivity for the issue of security, which is to become an inherent part of cultural planning, ensuring that it is not perceived, either within the institution or among the public simply as an obligation but rather as an essential aspect of the life of the cultural institution, and thus part of a much broader development programme.
In the event of emergency situations, the director is responsible for managing the event, whether directly or, should a particular person be assigned to the task, indirectly. [10] Lastly, should the museum be subject to theft or damage, it is appropriate that the director in person should give interviews and communicate directly with the press.

Security of the collections and due diligence against illicit trafficking in the *ICOM Code of Ethics for Museums*

PRINCIPLES

1. *Museums preserve, interpret and promote the natural and cultural inheritance of humanity.*
   1.7. Security Requirements
   The governing body should develop and maintain appropriate security to protect collections against theft or damage in displays, exhibitions, working or storage areas, and while in transit.
   (…)
2. *Museums preserve their collections for the benefit of society and its development.*
   2.1 Collections policy: acquisitions
   The governing body should adopt and publish a written collections policy that addresses the acquisition, care and use of collections. The policy should clarify the position of any material that will not be catalogued, conserved, or exhibited.
   2.2 Valid title
   No object or specimen should be acquired by purchase, gift, loan, bequest, or exchange unless the acquiring museum is satisfied that a valid title is held. Evidence of lawful ownership in a country does not necessarily constitute valid title.
   2.3 Provenance and due diligence
   The governing body must make every effort prior to acquisition to ensure that any object or specimen offered for purchase, gift, loan, bequest, or exchange has not been illegally obtained in, or exported from its country of origin or any intermediate country in which it might have been owned legally (including the museum's own country). Due diligence in this regard should establish the full history of the item since discovery or production.
   2.4 Objects and specimens from an unauthorised or unscientific fieldwork
   Museums shall not acquire objects where there is reasonable cause to believe their recovery involved unauthorised or unscientific fieldwork, or intentional destruction or damage of monuments, archaeological or geological sites, or of species or natural habitats. In the same way, acquisition shall not occur if there has been a failure to disclose the finds to the owner or occupier of the land, or to the proper legal or governmental authorities.
   2.11 Repositories of last resort
   Nothing in this Code of Ethics should prevent a museum from acting as an authorised repository for unprovenanced, illicitly collected or recovered specimens or objects from the territory over which it has lawful responsibility.
(…)
7. *Museums operate in a legal manner*
   1.14 Competence of museum personnel
   The employment of qualified personnel with the expertise required to meet all responsibilities is necessary (see also 2.19; 2.24; and section 8).
   1.15 Training of personnel
   Adequate opportunities for the continuing education and professional development of all museum personnel should be arranged to maintain an effective workforce.

Collections and research

Conservator [11] *– Curator* [12]

The conservator plays a key role in the study and expansion of the collection by avoiding illegal acquisitions and, on scientific and documented bases, ensuring the provenance and authenticity of the items acquired.
In the work of promotion and protection, the conservator and, if present, the collection assistant [13] see to the ideal placing of the artefacts, whether on display or in storage. On the basis of the type and material characteristics of the works, he or she will therefore assist those responsible for the displays by deciding on the systems to be used on the exhibition tour, whether permanent or temporary, to ensure the integrity of the works, the best form of display, and rapid evacuation in the event of an emergency.
The same care needs to be ensured in the case of temporary exhibitions, and it must also be borne in mind and implemented, during the planning stage, in the drafting and creation of display projects.
The conservator also has the task of establishing rules for the movement of objects (permits, notifications, identification panels) so that it will be immediately noticed if any objects are missing.

In the case of a territorial conservator, [14] the responsibilities in terms of security are more complex. The activities of monitoring, surveillance and reporting to the authorities concerned should form part of the museum's broader mission of active protection of the territory. This is based on training processes and awareness-raising among all citizens of their shared responsibility, making sure that any damage that may be caused to the cultural heritage is perceived as damage to the entire community and, as such, should be avoided and combated by the people, regardless of any special protection devices and protocols that may be put in place.

Inventory coordinator [15] *– Document Centre manager* [16]

The objects that are acquired and housed in the museum must be accurately recorded and inventoried and later catalogued in accordance with technical and scientific criteria. [17] Aside from the analytical description of the objects from an art-historical point of view, for the purposes of security – to prevent theft and to facilitate the recovery of works in the case of theft – it is essential to have full information, together with photographic documentation that makes it possible to identify the object with absolute precision, as provided for by the Object ID. [18]
The museum's Documentation Centre also plays an important role in terms of security, since it brings together all the records concerning the object, from the recording of its exact location to photographic documentation, loan entries, and any handling by scholars or other authorised persons. All handling must be recorded both before and after, reporting any damage, which is fundamental in the case of theft.

Registrar [19]

A specialist in the movement of works of art, he or she is constantly concerned with ensuring the safety of artefacts, since the circumstances involved are those that present the greatest risks: transport both inside and outside the museum. Every stage and action in his or her activity, which is carried out in close collaboration with the head of security, the conservator and the restorer, is documented, since it includes permits, insurance and handling – which can be particularly complex in the case of some intercontinental destinations – which require special precautions and additional security protocols while setting up exhibitions.
For the purposes of crime prevention, it is his or her task to complete the Object ID of the work with entries and pictures that will enable the artefact to be identified by means of its distinguishing features.
In the case of loans to distant countries and to museums that are less well known and less authoritative, particular care needs to be taken to avoid the risk of counterfeiting, using technologically advanced devices for identifying the object being transported.

Conservator-restorer [20]

In his or her work, which is intrinsically linked to the materials of which the object is made, he or she can provide important information about the authenticity of the work and about partial forgeries. His or her technical contributions are also key to deciding if works can be moved without harm. Precise documentation of maintenance and restoration, and of the state of conservation of cultural assets may prove useful for identification should stolen goods be found.

Exhibition installation designer [21]

The security of cultural objects needs to be addressed right from the exhibition planning stage. When drafting the project, the exhibition designer needs to examine the permanent and/or temporary displays, considering the complex issues of security. The assistance of the Cultural Heritage Protection Unit (NTPC: Nucleo Tutela Patrimonio Culturale) may be requested to assess the active and passive protection systems in advance. Museological requirements may themselves suggest suitable protection devices based on the type of artefacts, their location within the display, and the characteristics of the setting. The designer thus needs to balance the conditions that allow for optimal display, rapid evacuation in the case of emergencies, and the possibility of apprehending criminals who have damaged or stolen artefacts.

Visitor services

Manager of the education and visitor service [22] *– outreach officer* [23]

Outreach and educational activities, which often involve large groups of people, require extreme caution: during museum visits, confusion may distract the gallery attendants and also prevent a full, clear view of the cultural assets on the video surveillance systems. In collaboration with the security manager, the education service manager must establish the maximum number of visitors per gallery and the correct procedure for the visit, as well as any special security devices for the objects. In order to protect cultural objects from vandalism, particular attention must be paid to training the outreach staff, giving them instructions concerning their task of surveillance. [24]
As well as watching out for any issues concerning the security of the objects, which must be promptly reported to the manager, the outreach officer must have the public understand how important it is to behave properly in the museum galleries. Educational activities must never endanger the cultural heritage.

Visitor care and security manager [25] *and assistant* [26]

The front desk staff and gallery attendants play a key role in the security system. They are in direct contact with the public and must therefore be able to welcome them, provide information, and make sure the visitor feels at ease, noting any anomalous behaviour that might put the cultural heritage at risk, as well as responding to any needs in a cordial, professional manner.
The assistant carries out his or her task [27] by:
- Monitoring the exhibition and storage spaces, as well as the utility rooms (teaching workshops, storage spaces for materials and furnishings, etc.);
- Monitoring (if there is no special security service) the inner and outer perimeters of the museum;
- Checking the conservation and security systems (fire prevention, anti-theft, anti-intrusion, air-conditioning);
- Monitoring the points of access and movements of visitors, fully respecting the museum's code of conduct;
- Assisting in the proper conservation of works, assets, installations and premises, reporting any conservation issues affecting the works, and any tampering, wear and malfunctioning to the service coordinator so that the museum administration may be warned immediately and the technical services brought in;
- Heightening the level of surveillance in the case of crowding, confusion or particular situations (exhibitions, concerts, performances, etc.);
- Never abandoning his or her post except on the direct orders of, and in the way prescribed by the manager, or in response to special service orders;
- Reporting the presence of bags or containers left unattended in his or her area;
- Maintaining calm in emergencies and implementing the relevant procedures as described in the Emergency Manual;
- Maintaining absolute confidentiality concerning the organisation, the security systems, the value of the objects and the life of the museum, other than for purposes relating to his or her visitor duties;
- Reporting problems and suggesting solutions to the manager that might improve security;
- Providing the police with all information that might help their investigations in the event of emergencies and, on the contrary, avoiding any external contact that might aim to glean information or declarations about such events.

The head of the service must ensure smooth operations by means of:
- The organisation of shifts that never involve moments when the staff are absent;
- The visibility of staff identification devices;
- The use by members of staff of means to raise the alarm or for individual communication (closed-circuit radio transceivers, whistles, etc.);
- Maximum circulation of the protocols contained in the Emergency Manual;
- Continuous training/information for staff;
- Compliance with the code of conduct by all workers;
- Periodical monitoring of the services being carried out by the workers;
- In collaboration with the workers, the compiling of a record of anomalous events, complete with the time, date, place, people involved, description of the event and any other information that might help understand what has happened;
- Close collaboration with the security manager;

Whether alone or in a group, members of the security staff and gallery attendants can provide useful information about the behaviour of people moving around the museum. It is important that this should not be the task solely of the control room, but also of gallery attendants. This is a habit/attitude that must become an aspect of surveillance for crime-prevention purposes, but also a form of direct participation in security issues.
No machine can ever replace vigilant security staff.

Library and media centre manager [28]

By providing scientific insight into the collection, by maintaining and updating the register of publications and catalogues, his or her contribution is useful for verifying the provenance and method of acquisition of the museum's assets. At all events, due to the type of items it holds, the centre must ensure the protection of its own holdings and collections from theft or damage.

Webmaster [29]

In terms of crime prevention, the webmaster – who has the task of promoting the collections and the museum via the Internet and informing the public about the institution's activities – must be careful not to violate the confidential status of some information, in particular to avoid revealing the distribution of spaces, the access and exit points, the location and characteristics of the technical installations and any other details that might reveal potential vulnerabilities of the facility.

Administration, organisation and logistics

Administration and financial manager [30]

This post is particularly important for ensuring that the issue of security becomes a mainstream concern within the institution: from the management of human resources and their training, to the drafting of contracts for supplies and outsourced services, it is clear that the work requires great diplomacy and absolute transparency and reliability. A very high percentage of thefts and robberies in museums unfortunately involves internal personnel, or staff of external companies that provide services for the institution. It is the task of the manager to draft documents that protect the museum to the greatest extent, with verification formulas, termination clauses and targeted insurance coverage. The financial officer has the task of ensuring annual expenditure for investments in security and upgrades.

Logistics and security manager [31]

In compliance with the law, a security manager is present in all museums, with responsibility both for fire prevention [32] and for staff safety (RSSP). Even so, in small and medium-sized facilities, the manager does not cover all aspects concerning safety and security (ranging from the facilities to the artefacts and people), but solely the functions established by the two regulations, [33] which are however considered separate, while the security of the museum's objects are normally the responsibility of the director.
The evident complexities involved in the security of a museum's cultural heritage requires legislation to oblige all museums to have a museum security manager, with greater cultural skills and sensibilities than those currently required of those indicated in the law on the safety of personnel and fire protection.
In any case, the safety manager, who has his or her own department in larger, more complex institutions, must work in close contact with the department for the maintenance of the cultural heritage, so that any work to bring up to code or simply to maintain and renovate the building is the result of a joint operation, which will ultimately ensure management that is ideal in terms of security.
As concerns crime prevention, it is essential to draft a special document (confidential and accessible only to authorised personnel) regarding the risk of theft, robbery and vandalism, as part of a much broader security and emergency plan for the museum. The plan needs to ensure monitoring during its application and periodical staff briefings. If the situation so requires, depending on the size, complexity and resources of the museum, a special, particularly skilled person may be required to manage the plan, with his or her assistants, bearing in mind that the following are necessary:

- A review of the passive protection system of the facility (fences, grids, armour-plated doors, etc.) also with the preventive collaboration of the local NTPC;
- A programme of periodical checks of the systems to protect the facility's artefacts and alarms;
- A programme of operations for the maintenance and/or improvement of the safekeeping of the artefacts;
- Periodical inspections of all areas in the facility, including those that are not open to the public;
- Staff verification procedures (entrances, management of the keys, ID devices, etc.);
- Self-assessment tests and assessment of the museum on matters concerning security;
- Emergency-management training and briefing of staff working in the museum;
- Detailed verification of outsourced daytime and night-time surveillance, if applicable;
- Collaboration in the preparation of calls for tenders relating to crime-protection systems, such as the creation or adaptation of alarm systems, and security services.

IT manager [34]

The IT manager plays an important part in ensuring security, and for the acquisition and processing of data concerning management of the collections, of the staff and of users. The service needs to be involved in organising the inventory and catalogue databases of the museum's assets, preferably with information that may help recover objects in the case of theft, and designed in such a way as to allow cross-checking of the data for targeted investigation. The IT service may also create special applications for the management of artefacts in emergency situations. [35]

Marketing, promotion and fundraising manager [36]

Until just a few years ago, fundraising concerned only occasional events, exhibitions, restoration operations, scientific research, special publications and simple promotion operations. Today it would seem that the focus is on a much broader range of management and organisation issues (such as planned conservation activities), so it would seem wise to raise awareness among the public about the importance of safeguarding cultural assets, which are both a distinctive symbol of local identity and a universal heritage.
As concerns crime-prevention strategies, fundraising policies are based on the concept of shared responsibility and thus should not be restricted simply to funding spot operations – such as purchasing an anti-theft system – but should be geared towards the construction of large, integrated projects. These need to involve qualified suppliers and service providers through forms of technical sponsorship or specialist partnerships, in order to ensure the provision of anti-theft devices and security, and monitoring and professional training with a view to ensuring shared responsibility. Another approach might be to use communication campaigns to raise awareness, among the communities involved, of the now inescapable issue of protecting our cultural heritage.

Press and media manager [37]

In terms of crime prevention, the manager intervenes at the regrettable moment that a crime is committed. Good communication is essential both for safeguarding the reputation of the museum among the public and the international community (lending museums, insurance companies, sponsors, etc.) as well as for facilitating the subsequent phases of recovering stolen or damaged goods and identifying those responsible. The content, time and means of communication must be agreed upon in advance with the museum director, bearing in mind the assessments of the police, in order to avoid interfering with any investigations that may be under way. Care must always be taken to provide certain, verifiable information when describing how the event took place, carefully avoiding any conjectures or suppositions.
Even though unfortunate, the moment of exposure to the media can also be used to good effect, if it can be used to convey an idea of the special nature of the institution, and the strengths of its collection and of its staff, making sure that public opinion is not led towards unwarranted or superficial condemnation. It is thus wise to prepare in advance information about the museum that can be given to the press.

Warden – Resident custodian

In this ideal organisation chart, which in our museums corresponds more to the functions and skills of a number of figures than to particular professional profiles, there is often also a resident custodian [38] in the case of state-run museums, whose functions mainly involve ensuring the safe custody of the facility and the cultural heritage it contains, starting with its security. He or she is entrusted with checking all the premises, verifying that the installations are in good condition and working order, in accordance with the directives received, management of the keys and access codes, reporting any anomaly and requesting the intervention of public authorities in the event of an emergency (police, fire brigade, etc.).

Volunteers

In museums, as in libraries and archives, there are increasing numbers of volunteers who, in their various ways, take part in management or, more frequently, in security and visitor-care roles. These are recognised associations of young people taking part in civilian service projects, and individual internees completing their academic training with direct experience in cultural facilities.

ICOM Italia has always declared its support for volunteer work, considering that this form of community participation in the life of the institutions can lead to a virtuous process of acquiring knowledge, sharing values, and raising awareness of the responsibilities involved in caring for the cultural heritage. On the other hand, it has also warned those public administrations in Italy that increasingly tend to use volunteers as a result of a distorted vision that is motivated solely by the need to cut costs, thus replacing rather than accompanying permanent professional staff. [39] Based on the concept that the use of volunteers should be allowed in the institution only when the presence of indispensable members of staff – the director/conservator and security manager at the very least – are present, it is clear that any recruiting must be preceded by adequate training and, also with regard to security needs, by constant updating.

[1] The *ICOM Code of Ethics for Museums* was drafted at the international level and has been amended over the years. The current version was approved unanimously by the 21st General Assembly of ICOM in Seoul (Korea) on 8 October 2004. The Code reflects the principles accepted by the international museum community. Registration with ICOM in any part of the world requires the member to accept and respect the Ethical Code in its own conduct. The English-language version can be downloaded at http://icom.museum/fileadmin/user_upload/pdf/Codes/code_ethics2013_eng.pdf.

[2] The *Carta nazionale delle Professioni Museali* drafted by ICOM Italia was approved by the National Conference of Museum Associations (Conferenza nazionale delle Associazioni museali) in 2006.

[3] See Maffei T., *'Il piano di sicurezza ed emergenza museale'* in Manoli F., *Manuale di gestione a cura delle collezioni museali*, Le Monnier, Florence (in press). One useful technical source is the circular issued by the Ministry of Cultural Heritage and Activities (formerly the Research, Innovation and Organisation (R.I.O.) department) no. 132 of 8 October 2004 concerning *emergency plans for the protection of cultural heritage* and its annex on the 'key content of the emergency plan', drawn up by the Special Permanent Commission for the Security of the National Cultural Heritage.

[4] In addressing the issue in the English-speaking world, much attention has always been paid to the issue of staff motivation in terms of both a positive work climate and fair remuneration for their work. In special cases of precious collections also a fidejussionary policy is required for employees.

[5] The professional profiles are those indicated in *Manuale delle Professioni Museali in Europa*, the 2008 version published by ICOM Italia of *Museum Professions – A European Frame of Reference* published by ICOM in 2007. The publication, which takes into consideration three national projects concerning museum professions (Switzerland 1994 rev. 2006, France 2001, Italy 2005) and the *ICOM* Code of Ethics for Museums (2006), outlines 20 professional profiles in 3 basic sectors (collections and research/administration/visitor services, management and logistics). Fully aware that the world of museums is very varied and capable of surviving thanks to the skills that are often acquired by a single professional, it is necessary to stress the importance that all functions be properly carried out, ensuring minimum standards of quality and, in the specific sector of security, the protection of the cultural heritage held by the institutions.

[6] See Legislative Decree no. 42 /2004: Article 30, *Conservation Obligations*, para. 3: 'Private owners, possessors or holders of cultural property are required to ensure their preservation.' Article 163, *Loss of property*, para. 1: 'If, as a result of a breach of the obligations set out in the provisions of Section I of Chapter IV, and of Section I of Chapter V of Title I of Part Two, the cultural property is no longer traceable or has left the national territory, the offender is required to pay the State an amount equal to the value of the property.'

[7] The director is in charge of the museum, within the framework defined by its governing authority or board of trustees. He or she must plan the strategic options to promote and develop the institution. He or she is responsible for the collections and for the quality of the activities and services of the museum. The director has the threefold function of scientific, cultural and managerial leadership.

[8] Analyses carried out by the TPC Headquarters show that there is a preference for foreign destinations, particularly since the item will be harder to identify in countries that are not that of its origin.

[9] The Emergency Manual is the operational instrument of the Security and Emergency Plan. It is a public document, which must always be kept up to date and made available to all museum professionals. It must contain a brief summary of the risk analysis and the compensatory measures to be implemented, depending on the type of emergency, and the chain of command. It also provides the basis for the drills scheduled in the Plan. Useful indications for the drills can be found in the circular issued by the Ministry of Culture and Activities (formerly the Department for Research, Innovation and Organisation (RIO)) no. 30 of 6 February 2007 concerning emergency plans for the protection of cultural heritage and its annex on planning and managing drills.

[10] It should be borne in mind that, in the organisation of museums, the ultimate responsibility for fire protection (Min. Decree 569/92) and personal safety (Law no.626/94) is attributed to the museum directors, as the persons responsible for activities carried out within the museum.

[11] The person responsible for the collections. The conservator's functions cover five areas: the conservation, development, study, promotion and management of the museum's collections.

[12] He or she drafts the plans for and manages temporary exhibitions, under the responsibility of the director and in collaboration with the curators. When requested, he or she helps set up the permanent displays. He or she drafts the programmes and approves the projects for temporary exhibitions, and collaborates with the head of the educational and mediation services in order to promote communication concerning the exhibitions and access by the public, as well as contributing to the creation of publications and to the promotion of projects entrusted to him or her.

[13] Under the responsibility of the conservator or, if provided for, by the restorer, he or she assists in the conservation of the collections and in the implementation of procedures for their management, both in storage and on display. He or she is responsible for physically labelling the objects, and for their location, and assists in photographic campaigns, takes part in documentation programmes and in the exhibition of works, and prepares objects for conservation, study and display to the public, as required.

[14] This profile, which is not present in the European Manual, is referred to in paragraph 4.3.1 of the *Carta delle professioni museali in Italia* and clearly illustrates the situation in a country that has a very widespread cultural heritage and museums that are very closely interconnected.

[15] The inventory coordinator is in charge of the inventory and cataloguing of collections. He or she is responsible for consistent cataloguing of the collections, whether on display or in storage. He or she takes part in the documentation of the collection and in the creation of related databases and in specialised publication projects.

[16] He or she collects, prepares, processes and circulates documentation of the collection, of the exhibitions and of the museum's other activities both inside and outside the museum. He or she administers the archive and photo library in collaboration with the head of the library/media centre. In collaboration with the conservator or curator, he or she carries out documentary research to facilitate studies concerning the collections or the realisation of exhibitions, and reorganises the cataloguing and data-processing systems and oversees their updating.

[17] The Ministerial guidelines (M. Decr. of 10 May 2001) moreover states that essential activities include the acquisition and registration in the inventory, complete cataloguing of alphanumeric, iconographic and cartographic data, graphic and photographic documentation, and preferably the management of IT systems in order to allow for consultation, integrated knowledge and the historical and territorial context of the assets.

[18] See p. 18.

[19] Reporting to the conservator, the registrar organises and manages the handling of works in the storage and exhibition spaces, collaborating with public and private partners both inside and outside the museum. He or she organises the transport of works and watches over their security, drafting contracts and checking the insurance conditions, supervising the implementation of loans and keeping the handling register up to date.

[20] In concert with the conservator, the restorer carries out all activities involving the maintenance, preventive conservation and restoration of the museum collection. He or she drafts a restoration plan for the collections and the specifications of the works to be restored. Carries out the operations planned for the works. Monitors the collections both in storage and on display.

[21] Plans and oversees the exhibition designs in collaboration with the conservator/curator and the museum team. He or she prepares the spaces for the public and, when required, establishes the overall graphic format, coordinating the various suppliers who help set up the display.

[22] In charge of all programmes, activities, studies and research concerning the presentation of museum artefacts to current and prospective visitors. Working under the supervision of the director, he or she assists in drawing up visitor policies and a programme of activities directed at all target audiences. To this end he or she sets up a network of external contacts in order to relay information to target audiences. He or she calls upon the skills of other specialists in the museum to contribute to activities and provide documents to accompany the visit. In charge of training plans for the outreach assistants and guides, he or she also helps train the front desk staff and gallery attendants. Assists in the design of exhibitions and drafts the instruments to assess the programmes and educational activities.

[23] Tasked with setting up the various educational activities for all current and prospective audiences. Takes part in designing and promoting actions and services for permanent and temporary exhibitions. Takes part in assessing the educational programmes and actions. Informs the person in charge about the needs and expectations of different types of public in order to develop new programmes or actions.

[24] During an exhibition at the Capitoline Museums in Rome, three works by Matisse were found on 22 January 1998 to be damaged

by the tip of pencil, which was attributed to a school group during a visit to the exhibition.

[25] Organises the reception of visitors and ensures both their wellbeing and the security of the cultural assets. Prepares the initial information and guidance of the public under the responsibility of the director. Organises the activities of the front desk staff and gallery attendants. Responsible for surveillance of the interior of the museum and areas pertaining to it. Organises the ticket office and points of sale. Checks that public spaces are in good condition and that visitors are properly cared for. Checks that the security (anti-theft, air conditioning) devices and (visitor) safety installations are installed and in good working order. Takes part in visitor surveys, organising the collection of information by means of questionnaires or interviews.

[26] Responsible for the front desk, for guiding the public, and for security in all accessible spaces. Ensures the ordinary maintenance of these spaces and emergency services. Provides initial information to the visitors, monitors their access, and ensures that rules of conduct are respected. Helps the public find their way around and reports any possible difficulties to his or her manager. Checks on the state of the works on show and on the display installations, and reports any deterioration or risk to his or her superior. Provides initial answers to visitors' questions concerning the museum, the collection and the exhibitions.

[27] See p. for information about the approach to adopt in the presence of criminal activities (theft, robbery, vandalism).

[28] The library and media centre manager prepares, organises and manages the various publications (all media) relating to the collections, exhibitions and history of the museum. He or she is responsible for the conservation, cataloguing and classification of artefacts, in order to facilitate access by the public and to put these resources at their disposal. He or she assists with the research and development of the collections of the library/media centre. He or she collaborates with the document centre manager to attend to requests for copy and reproduction rights.

[29] The webmaster works with the press and media officer to design and develop the museum's website. He or she updates the site and, together with the IT manager, manages relations with the Internet provider. Reporting to the conservator and exhibition designer, he or she creates virtual exhibitions.

[30] Reporting to the director, he or she organises and improves the museum's administration and financial management, the staff, the legal protocols, and the running of the institution. He or she oversees procedures open to the public, the means of purchasing and purchases, and the agreements and contracts required for proper running of the institution. Regularly checks the state of income and expenditure and the cash position, and is responsible for management control. Ensures that the museum is managed in accordance with principles of economy, effectiveness, efficiency and transparency.

[31] Responsible for maintenance of the building and for the efficient operation of the technical services of the museum, organises the display and maintenance of exhibitions. Provides all services required to ensure the safety of staff and visitors, and of the collections and facilities. Implements environmental measures for the conservation of the collections. Prepares and implements a preventive maintenance plan for the facilities. Ensures compliance with laws and regulations on labour, health and safety, and on protection of the environment, as well as with fire-prevention regulations.

[32] With the entry into force of the regulation on fire prevention, on 7 October 2011, pursuant to Presidential Decree no. 151 of 1 August 2011, 'historic buildings' (and the like) are included in paragraph 72 of Annex I to the Decree, with a formulation that is different from the provisions of the former list in the M. Decr. of 16 Feb. 1982. It can be inferred that the assets subject to it include (in line with previous issues) 'buildings of value' that are open to the public and used as libraries and archives, museums, galleries and exhibition spaces, regardless of the total area and quantities.

[33] As regards fire prevention, Art. 10 of M. Decr. 569/1992 on 'Fire-prevention safety regulations for historic and artistic buildings used as museums, galleries, and exhibition and display spaces' provides for a technical safety manager, as also provided for by Art. 9 of Presidential Decree no. 418 of 30 June 1995 concerning 'Regulations on fire-prevention rules for buildings of historic and artistic interest intended for use as libraries and archives.' The head of the Risk Prevention and Protection Service (RSPP) is required by Legislative Decree no. 81/2008 and concerns the safety of workers.

[34] The IT manager plans, maintains and manages computers, networks and software as well as multimedia systems. He or she develops the computer network to improve in-house data management and external communication, and enforces data-access security and data protection.

[35] See *App. sicura IBC*, the interesting Web app called Museum Risk Savez for managing the rapid evacuation of cultural assets in the event of an emergency.

[36] The person who, reporting to the director, is in charge of developing marketing, development and promotion strategies for the institution, and in particular for its visibility and to increase the number and loyalty of its visitors, as well as fundraising. He or she plans the actions and IT supports to increase the visibility of the museum and its role in the community. He or she monitors current and prospective visitors and develops adequate promotion strategies. He or she promotes greater involvement and commitment by the public in favour of the institution (friends of the museum, volunteers, etc.) and contributes to the financial development of the museum through fundraising.

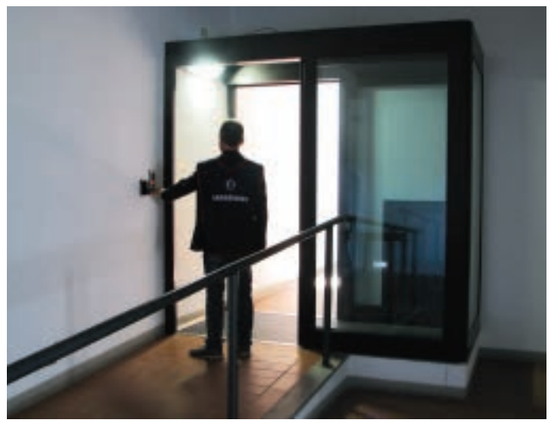
[37] The press officer uses all media to develop and implement strategies to make known the mission, aims, content and activities of the institution. He or she coordinates and assists the professionals in the museum in their relations with the media, and develops and maintains relations with media professionals.

[38] The tasks of the 'resident custodian' were redefined by regulations issued by the Ministry in June 2006.

[39] This is increasingly the case in Italy. See 'Professionisti e volontari per i musei e il patrimonio culturale', Work seminar of the board and management of ICOM Italia at the Villa Emo, Fanzolo, 26 January 2013, see www.icom-italia.org.

Ponteggi e relativi dispositivi di sicurezza anticrimine | *Scaffolding with crime-prevention devices*

Telecamere di sorveglianza in aree esterne | *CCTV surveillance cameras in outdoor areas*



Centro di controllo e relativi accessi | *Security control room and its entrances*

Porta e finestra con sistemi di allarme | *Door and window with alarms*

Armadietto chiavi | *Keybox*

Sensori d'allarme e vetri di sicurezza | *Alarm sensors and bullet proof glass for works of art*

Teche espositive di sicurezza | *High-security showcases*

Telecamere e sensori d'allarme | *CCTV cameras and alarm sensors*

Depositi | *Storage facilities*

PART TWO

SECURITY MANAGEMENT

THE SOCIAL AND INSTITUTIONAL CONTEXT

The level of security of assets kept in a museum depends to a great extent not only on the characteristics of the facility and its surroundings, but also on its geographical, environmental, social and political setting.
If the geological and environmental nature of the setting is particularly significant in terms of the risk of natural disasters, a further factor to consider for the purposes of crime prevention is the social cohesion and level of civic engagement of the local community.
While knowledge and awareness in the community of the importance of the cultural heritage may heighten attention and thus general watchfulness over the institution, the existence of areas of criminality may facilitate plans for theft, also on commission, and may make the trafficking of stolen works easier, [1] just as poverty and social conflicts may lead to disturbances and damage directly or indirectly aimed at cultural objects.
In view of these dangers, the museum needs to reinforce its surveillance and work actively with the police to prevent and deal with any criminal action. When adopting a long-term, all-encompassing view for the preservation of cultural heritage, it is important that the cultural institute should play an active role in disseminating knowledge by ensuring an increasingly participatory form of promotion. A shared sense of responsibility for the protection of cultural heritage can only be obtained through widespread knowledge of its identitary value, together with its aesthetic and scientific value. It is also essential for national and local communities to understand its importance as a means for personal and collective enrichment and as a resource for the cultural and economic development of the territory.
In recent years we have witnessed a wide range of attacks on the cultural heritage of countries near and far, which have been the theatres of wars and revolts: pillaging, destruction and theft facilitated by political instability and by an *escalation* of fanaticism and violence, leading to an inability to operate and to weakness or even the absence of institutions for its protection.
The deliberate destruction of the cultural and religious artefacts of ancient civilizations is particularly shocking, from the destruction of the stone statues of Buddha in Afghanistan to the recent destruction of cultural heritage in Iraq, Syria, Yemen, Mali and Libya.
The countries outside the areas of conflict appeared to be safe from acts of deliberate destruction of cultural heritage, but the possibility of attacks, as has been dramatically highlighted by events in the Jewish Museum in Brussels or at the Bardo Museum in Tunis, show that almost everywhere is at risk and targets can also include museums, as the guardians of a historical memory that the assailants wish to destroy. [2]
For this reason, the Italian Ministry of Cultural Heritage and Activities and Tourism recently called upon outlying institutions to strengthen the preventive, organisational and procedural systems already provided for (stepping up the control of access by visitors and authorised personnel, control and management of keys; compliance with the procedures for opening and closing exhibition galleries and reading, study and control rooms; verification of the effectiveness of current passive security measures and providing training for the staff). [3]
In emergency situations, an important role is also played by international institutions, and by UNESCO and ICOM in particular, which combat the trafficking of stolen goods, facilitating their return to their countries of origin. [4]
The second *post-conflict* situation in Iraq, as seen through the experience of the CC TPC, is still of great use in understanding what has taken place and is still taking place in Libya, Egypt, Mali and Syria. It is hoped that in accordance with the provisions of the 1954 Hague Convention and subsequent protocols, every country will feel the need to adopt preventive measures to protect the cultural heritage of which it is the custodian for all humanity against the predictable effects of armed conflict.

Also recent experience has shown that looting and indiscriminate theft of cultural objects may be among the consequences of war, as well as of institutional instability, unchecked violence, riots and a constant lack of public order. In all these conditions, museums – more than any other cultural institution – are a prime objective for new and seasoned criminals who are interested in art and in the profits that can be made from its illicit trafficking.
With little or no control of the territory and with peaceful coexistence compromised, it is more difficult for the museum to put into place security measures that can withstand an assault on the treasures they protect.
In any case, in times of peace, the facility needs to organise itself independently to counter these risks, defending the cultural heritage it contains and calling in the police rapidly so that they can intervene quickly and effectively. In times of war and of great social upheaval, however, security can only be ensured by military or police intervention.

The Italian mission to the Baghdad Museum (2003-2004)

From July 2003 to January 2004, two officers of the CC TPC Headquarters took turns at the Archaeological Museum in Baghdad, working as *advisors* of the Italian Government Mission to the Iraqi Governing Council, the provisional government of Iraq, coordinated by the Ministry of Foreign Affairs in collaboration with the MiBACT.
After it was looted, the Baghdad Museum was the prime focus of international concerns. The museum was in a chaotic state, with all the rooms, offices and corridors littered with remains of all kinds, from furniture to smashed fixtures and broken furnishings, with papers and documents scattered everywhere, broken glass, rubble and copies of archaeological finds. Even though some showcases had been smashed, the situation in the exhibition galleries was more reassuring, and appeared to be more in order: the display cases were empty and many were closed, as though they had been emptied before looting. This impression was indeed borne out by the facts. The tragic situation of the museum in Baghdad, which the international press portrayed as having suffered the looting of 170,000 archaeological finds, was actually less catastrophic than feared, for almost all of the archaeological treasures in the museum had been rescued by Iraqi staff before the looting took place.
The aim of the mission was to create a computerised database as the first instrument for the recovery of missing artefacts and to find out how many and what objects had been stolen. The task proved to be extremely arduous: the inventories had been devastated; the data sheets of the individual items were scattered everywhere: many had been used to light fires to illuminate the galleries, which were in the dark due to power failures, so the lists of what had really been kept were difficult to tally.
A computer workstation for indexing the archaeological finds – consisting only of a laptop and a scanner – was immediately set up in the museum director's office. Thanks to the efforts of officials, employees, archaeologists and students of Baghdad University, a database of archaeological finds stolen from the Baghdad Museum was created, organised and managed. A catalogue input document, with an extremely simple format but complete with all the essential data, was created to ensure effective inclusion in the databases of specialised police forces. This was the ID Card for archaeological artefacts. During the mission, 3000 of these concise cards, each with a photographic reproduction, were transmitted daily by e-mail to the CC TPC Headquarters in Rome, from where, through the National Interpol Unit, they were sent to the International Cooperation headquarters in Lyon and to UNESCO. At the same time, to ensure the widest possible circulation of information about the items to be found, and to prevent their illicit trafficking, photos of the missing items were put on the website of the Carabinieri Corps (www.carabinieri.it), where they can still be seen.

THE BUILDING COMPLEX AND SURROUNDING SPACES

Characteristics of the building

In-depth knowledge of the physical and technological characteristics of the architectural structure is essential for understanding its vulnerabilities and for finding potential means of access that criminals might use or create in order to enter the museum.
Any building that houses cultural resources, whether its perimeter walls give directly onto the street or, especially, if it is entirely or partly surrounded by a park/garden area, must be adequately protected by security systems – primarily those of a passive nature – and adequately illuminated in order to avoid conditions that might facilitate the entry of criminals.
Another factor that has a direct influence on the potential for criminals entering is whether or not the building is isolated and/or entirely occupied by the museum/library/archive, or located inside a building that is also used for other purposes. In the latter case, even if all the normal points of entry and the perimeter of the building are fully equipped with security systems, the fact that it shares walls with other premises that are not necessarily protected – or in any case not under its direct control – may enable a 'hole-in-the-wall' gang to break through the dividing wall and get in, if special anti-intrusion measures have not been put in place. Similar vulnerabilities can also be found in buildings that are devoted entirely to a cultural institution, when the outer walls are in contact or shared with other buildings.
Isolated buildings, on the other hand, offer potentially greater levels of security than those used for a number of purposes, where control is inevitably only partial, due to the limitations put on checking the entrances to the building, to other properties and to shared spaces and rooms. In terms of defence against criminal aggression, there are a whole series of positive factors, the most important of which are the following: the materials of which the building is made, its urban setting and surroundings, the nature and characteristics of the external perimeter, passive defence measures, alarm systems and video surveillance, and the effectiveness and efficiency of the security service.
The ability to prevent the risk of criminal aggression is thus inextricably linked to an overall understanding of the building and its surroundings.
The perimeter access points are the first potentially critical aspect: they are of course designed to allow the entry of staff, visitors and materials, but they are also the principal means by which criminals can enter while the premises are open. If there is no visual and technological control (such as a metal detector) of people's personal effects, and if there is no cloakroom and visitors are allowed to take in bags, coats and similar items, criminals could blend in with the public and take in the materials they need to damage an item or carry out a theft, robbery or terrorist attack. While it is true that even just a pencil can be used to damage a work and that such an object, like a ring or a paperweight, can never be prohibited, it is equally true that visual and instrumental inspection, coupled with the prohibitions mentioned above, might be sufficient to make criminals opt for a plan of action that is more complicated than simply walking in with other visitors, if they need special equipment. The coexistence of a number of different security measures is one factor that should be borne in mind when making any decision concerning crime prevention. From the most mundane measures to the most technologically advanced, everything should be designed to create a situation that, in terms of 'perceived security', is sufficient to deter offenders from carrying out their actions.
Excluding entry together with normal visitors, should the criminals need equipment that would be unlikely to get in without being noticed, they might opt for the entrances that are reserved for staff or external companies. This includes not only companies that need to bring in or handle cultural materials (for storage, loans, restoration, etc.) but also those to which services are contracted (from the bookshop to the café and restaurant, through to cleaning companies, those that supply vending machines, maintenance firms for electronic equipment, telephones, etc., and fire-prevention or restoration companies). These might be used (directly or indirectly, consciously or otherwise) to introduce people and materials other than those that are authorised or expected. And, of course, there are more extreme scenarios, like those we see in action movies, for it is

not impossible for criminals to use these 'preferred' entrances: once inside, the criminals might act immediately, or they might hide an accomplice or the materials they need to carry out the burglary later on. The potential for these cases occurring requires protocols that make it possible to:

– Know in advance, on a day-to-day basis, the list of companies that are to enter the building (a further increase in security can be obtained by agreeing on the vehicle registration numbers and the names of the staff when the contract is signed; all these data must be kept constantly up-to-date);
– Make sure that anyone not on the list is authorised to enter, by verifying the actual call for assistance by the internal staff;
– Identify all those who enter, keep a note of the data and keep a record of all vehicles;
– Check the content of the vehicles and, where applicable, also a sample of the material that is being brought in;
– Upon departure, check all bags, packages and containers that might hide objects.

The rooms where consumables are kept and service premises that contain cleaning materials, which may be located at some distance from the exhibition galleries and storage areas for cultural items, should be kept closed and monitored.

In any case, anyone who enters is an extraneous element and, even if known and authorised, should be accompanied by internal staff or at the very least, followed at all times by video cameras, also during their work. Periods when the alarm and video surveillance systems are off-line for maintenance must be considered as particularly critical. The surveillance staff must be present and on high alert during maintenance operations, which should preferably be carried out when the cultural institution is closed to the public and with the greatest possible number of staff present.

Regardless of the fact that the control room or the custodians' room is traditionally by the main entrance or the service entrance, all points of access must always be monitored even outside of opening hours. It is, however, only during opening hours that the main entrances become the preferred means of access also for criminals. During closing hours, the means of getting in are chosen on the basis of the least risk of being seen or caught, the ease and facility of penetration and the time it takes to enter. In such situations, and when a 24-hour security service is in place, the use or creation of openings other than the normal entrances, preferably far from normal points of transit and of possible observation (by security staff but also by members of the public), will be the first choice.

Especially if the building is isolated, the perimeter lighting is not only an effective deterrent, but also the best way of making it possible to quickly identify individuals who intend to penetrate the facility. This means that the lighting must ensure visibility along the entire perimeter of the building (with no areas of shadow) and, in particular, of:

– all openings that might allow criminals to break in;
– projecting elements (e.g. drain pipes, architectural elements such as pointed or rusticated ashlar, etc.) which criminals might use to climb up to higher floors.

It is advisable to combine fixed illumination with additional lighting that, coupled with movement sensors in the most sensitive outdoor areas, can project a beam of light to attract attention.

Lighting makes it possible to see, but there has to be someone who can observe and understand what is going on. The longer it takes to get in, the greater the chances that the security staff will have of detecting the attempted break-in or for members of the public to notice what is going on and raise the alarm. If the traditional video surveillance system is also accompanied by physical control of the inner/outer perimeter, or if a 'smart' video surveillance system is used, [5] there is a high chance of blocking criminals even before they get into the facility; if there are also physical barriers that take time to remove, and an alarm [6] that warns of an attempted break-in before the actual intrusion takes place, then the chances of stopping it increase exponentially. Reiterating what we have just seen, strengthening the security system involves a number of complementary measures as well as the presence of people who can intervene immediately. This is why the various access points, including those on upper floors, must be fitted with physical barriers: [7] even though it is possible to get past them, they affect the timing and the need for special skills and equipment, slowing down the criminals' work or making them abandon the job. While it is normal to find effective passive security measures on the ground floor, even in historic buildings (on the doors and windows, including those in the basement; openings for loading/unloading materials, etc.), [8] there is usually less protection on the upper floors.

Height, however, does not of itself ensure greater security but only reduces the number of individuals able to climb up and get in. Some openings on the upper floors are of course more likely to be used for access than others, which means that they need to be fitted with stronger and more effective protection devices. These generally include French windows giving onto balconies, especially on the top floor; roofs with light wells; terraced roofs accessible from below; lift shafts and emergency exits onto an external staircase. The last of these, in particular, can be used not only for its real purpose but also by criminals wanting to go up and get through the emergency door or through other openings nearby. This leads to the convergence of a number of problems facing both isolated buildings and those with walls next to or shared with other buildings: the potential ease of access to upper floors without the criminals needing extra equipment.

In the case of fire escapes, it is possible to put in place all the measures necessary to thwart or delay the entry of criminals, making it possible to raise the alarm even before they manage to break in. Entry through shared walls cannot be detected until the criminals are already inside the building, unless acoustic detection sensors have been fitted or the security staff have noticed an attempt to break in while on patrol. Here, however, volumetric alarms in the exhibition galleries should come into play, as should the video surveillance cameras and the physical and electronic protection systems for the items on display.

The adjoining building, which are probably less well protected than the museum – at least in their public areas – may be used to reach the roof or the upper floors if the heights are compatible. In these cases, video surveillance, possibly coupled with motion sensors and infrared barriers, should be installed also for the openings on the top floors of the building and in other potential transit areas.

Escape routes for visitors and staff in the event of an emergency can become ideal means of access for criminals: emergency exits lead directly, or via the shortest and straightest route, outside the building, to open spaces – the assembly points – where rescue personnel and vehicles can easily intervene.

This route can be followed in the other direction and in most cases it pays off in terms of speed and ease of access: in accordance with the regulations, the emergency doors and gates, which are the only obstacle to entry if the assembly point is outside the perimeter of the building, can be opened by pushing a panic bar.

The ease of exit is of course reflected in greater ease in entering. Since physical protection devices cannot be used, the only possible forms of security are video-surveillance devices and sensors that warn when the door is opened. Visitor and staff emergency escape routes can also be used by criminals making their getaway. During opening hours, it is not difficult to set off an alarm that will bring about the evacuation of the building: once they have entered as normal visitors, the criminals can seize the moment (which is potentially chaotic, with the security staff busy and the acoustic alarm already on) to carry out the theft and leave the complex together with the public. It is at this point that the control room operator must be on highest alert to identify suspicious behaviour and immediately recognise further alarms from the security devices that protect the objects. If the conditions allow, before allowing the public to leave the assembly points, it is always advisable to carry out a visual check of the galleries and objects on display, and inspect sensitive rooms and those that might be used by the criminals to hide the objects or themselves as they wait for a better moment to strike. When the access routes are impracticable due to the intervention of the security staff or police, or for any other reason (e.g. if the assembly points are in a place that make it easy to escape) the emergency exits may constitute an alternative escape route for the criminals.

STATE OF CONSERVATION OF THE FACILITY AND EFFICIENCY OF THE INSTALLATIONS

The efficiency of both the structure and the installations in the facility complex must be constantly monitored and kept up to date with the latest risk analyses, and correct conservation of the museum collections must be ensured. It is thus essential to check every element in the building, in order to detect any potential problems in advance and remove any risk caused by the sudden loss of functionality in any of its component parts.
The inspections need to be carried out as scheduled maintenance, drawing up in advance a programme of checks that, if necessary, may be more frequent than those normally required by regulations in the sector. [9] In actual fact, the executive draft of a Maintenance Plan must be provided for any type of intervention involving public buildings in Italy; [10] the Plan must take into account the work as it is actually carried out so that its quality and efficiency with regard to the requirements and expected levels of performance for every part of the work and its components can be maintained over time. [11] This is not restricted just to the buildings but also, in the particular case of museums, to the display installations as well. The coexistence of a number of documents of this type for all the various operations must be reflected in a single, consistent and co-ordinated Maintenance Plan.
It is important that each check provided for in the plan should have a person responsible for it, considering that in some cases the checks are the responsibility of the security manager, while in others they are part of the maintenance operations entrusted to specialised companies. In yet others they may be included in service orders to the staff. This does not mean that the distribution of functions should not have a single manager for the facility's Scheduled Maintenance Plan. Depending on how the museum is organised, this manager may be specially appointed, or it may be the security manager.
The frequency of the inspections – daily, weekly, monthly, quarterly, biannually or annually – needs to be established not just on the basis of the regulations governing the sector, which constitute the absolute minimum for some areas, but also on the basis of the characteristics of the facility and on the areas of greatest vulnerability. This will make it possible to intervene promptly to repair, replace, improve and integrate should new regulations be introduced.
Depending on the complexity of the museum facility in terms of size, configuration and technology, the checklists may be drawn up for each functional area (structure of the museum, external perimeters, service installations, crime-prevention systems, microclimatic conditions, etc.) and entrusted to different members of staff. This method may lead to double or triple controls and forms of cross-checking [12] of the components and of the level of preparation and attention of staff, monitoring the validity of the organisation also for the purposes of integrating the security and staff-training systems. In any case, the checklists must always be formulated and approved by a single centre of responsibility.
When carrying out scheduled or extraordinary maintenance, the area concerned needs to be cordoned off and, for security reasons, access must not be permitted to persons not involved in the work.
Monitoring the state of conservation of the museum facility (building-service installations-organisation) is not solely for purposes of crime prevention, but also for the need to ensure that the facility is working efficiently as a museum.
A summary chart of the checks and, where applicable, the relative references to Italian laws are given below.

Type of system	Frequency	CL - Frequency provided by law	Type of staff	RL - Legal of law	NL - Notes
EXTERNAL PERIMETER					
External enclosure and entrances	Weekly		Security operative		
External features that might act as hiding places or alternative means of access (trees, bushes, etc.)	Monthly		Security operative Park maintenance manager		
Outdoor lighting	Annual	CL1 <3 years	Maintenance operative Qualified operative	RL1 RL2 RL4 letter b	NL1 NL4
FACILITIES AND DISPLAYS					
Walls	Annual	CL2	Maintenance operative	RL3	NL3
Verification of exhibition routes and displays	Biannually	CL1	Maintenance operative	RL1	NL1
External and partitioning doors and windows compartimentazione	Bimonthly	CL1	Security operative Maintenance operative	RL1 RL2	NL1
INSTALLATIONS					
CCTV system	Monthly	CL1	Control Centre operative Specialised personnel Service centres	RL1 RL2	NL1
Data transmission system (interiors – wi fi)	Bimonthly	CL1	Maintenance operative Specialised personnel Service centres	RL1 RL2	NL1
Perimeter and volumetric protection system Barriers and IR system	Monthly	CL1	Security operative Specialised personnel Service centres	RL1 RL2	NL1
Access control systems (emergency exits in particular)	Bimonthly	CL1	Maintenance operative	RL1 RL2	NL1
Signage	Quarterly		Security operative		
Electrical system Lighting units	Annual Biannually	CL1 <3 years	Maintenance operative Qualified operative	RL1 RL2 RL4 letter b RL6	NL1 NL4
Environment control system	Biannually	CL1 <1 year	Contractor	RL1 RL2 RL4 letter c	NL1 NL4
Fire-fighting system (smoke and gas detection, extinguishers, etc.)	Four-monthly	CL1 <6 months	Specialised company	RL1 RL4 letter a	NL1 NL4
Air-conditioning system	Annual	CL1 <1 year	Maintenance operative Specialised company	RL1 RL2 RL4 letter c	NL1

Type of system	Frequency	CL - Frequency provided by law	Type of staff	RL - Legal reference	NL - Notes
Heating system [13]	Annual	CL1 <1 year	Qualified manager Specialised company Heating system operation and maintenance manager	RL1 RL1 RL4 letter c RL5	NL1
Verification of the state of the control room (entrances, protection, internal/external communication)	Monthly	CL1	Control manager Specialised operative Service centres	RL1 RL2	NL1
PROCEDURES					
Change of access passwords and alarms	Biannually		Security operative		
Key management	Monthly		Security operative		
Surveillance (connections and line checks)	Monthly		Security operative		
Regulations visible to the public	Monthly		Security operative		

CL1 As indicated in the maintenance control plan (Presidential Decree 207/2010, Article 38, paragraph 7) in the maintenance plan, but also on the basis of relative CEI regulations
CL2 As indicated in the maintenance plan for facilities included in the maintenance plan (M. Decr. 2008)

RL1 Leg.Decr. no. 163 of 12 April 2006, Code of public contracts for works, services and supplies in implementation of Directives 2004/17/EC and 2004/18/EC, as amended, Article 93, paragraph 5 and Pr. Decr. no. 207 of 5 October 2010, Regulations concerning the execution and implementation of Legislative Decree no. 163 of 12 April 2006, entitled 'Code of public contracts for works, services and supplies in implementation of Directives 2004/17/EC and 2004/18/EC', as amended, Article 33, paragraph 1, letter e), Article 38
RL2 M. Decr. no. 37 of 22 January 2008, Regulations concerning the implementation of Article 11/14, paragraph 13, letter a) of Law no. 248 of 2005, entitled Reorganisation of the provisions relating to the installation of systems in buildings, as amended, Article 8 paragraph 2
Legislative Decree 81/2008, Consolidation act on safety in the workplace
RL3 M. Decr. of 14 January 2008, Approval of new technical standards for the construction, as amended, and explanatory circular no. 617 of 2 February 2009, clause 10.1
RL4 M. Decr. no. 569 of 20 May 1992, 569, Fire safety regulations for historical and artistic buildings used as museums, galleries, exhibitions and display spaces, as amended, Article 10, paragraph 3, letters a), b) and c)
RL5 Pres. Decr. no 74 of 16 April 2013, Regulations containing the general criteria for the operation, management, control, maintenance and inspection of systems for winter and summer climate control of buildings and for hot-water production for sanitary uses, in accordance with Article 4, paragraph 1, letters a) and c) of Leg. Decr. no. 192 of 19 August 2005, as amended, Article 7
At the national level, with the possibility of enacting more restrictive regional laws, there are the following requirements for heating systems: Methane/LPG: 10-100 kW every 4 years, >100 kW every two years; liquid or solid fuels: 10-100 kW every 2 years, >100 kW annually
RL6 CEI regulations 64-15: plants in listed buildings under 1089/39 – CEI regulations 17-113, Article 6.2.2.

NL1 The Maintenance Plan consists of a user manual, a maintenance manual and a maintenance programme, as per Article 38 of Pres. Decr. 207/2010
NL3 The technical standards for buildings require the Maintenance Plan to be filed with the Genio Civile (Civil Engineering Office) together with the project
NL4 The checks provided for by M. Decr. 569/92 must be entered in a special control register in which any modifications or additions to the electrical systems, complete with diagrams, must also be entered

TEMPORARY WORKSITES DURING MAINTENANCE AND RESTORATION

The opening of a worksite can constitute one of the greatest forms of vulnerability in terms of security for a museum, especially when the institution sees itself as a public service and intends to continue its activities during the works in order not to penalise the community.
The dangers that are inherent in worksites, due to the presence and use of high-risk machinery and the potential of the work to cause particular forms of interference, can cause accidents that might interrupt the climate-control and security systems, or cause fires or flooding, with serious damage to the collections. Together with these more evident and well-known problems, there is also an often underestimated increase in possible criminal action due to potential new points of access and to the presence of external workers within the museum. The regularity of the museum's ordinary life is interrupted when worksites are opened, as are tried and tested standard procedures: it is thus necessary to deal with the new conditions in a precautionary manner.
Despite numerous emergencies and great damage, the issue of safeguarding the cultural heritage has rarely been taken into consideration in advance during the functional restoration and redevelopment of important cultural sites, even in recent times. [14] Regulations concerning the safety of people in workplaces, and in temporary worksites in particular, do not include requirements for risk analysis and the planning of precautionary measures to protect a museum's heritage. This is further compounded in some cases by a lack of awareness of the problems among those involved.
Paradoxically, the preparation of projects designed to intervene on and in museums, which may range from scheduled maintenance to restoration or work on rearranging museum exhibitions, may not even involve the museum management, and thus not give it the opportunity to examine possible interference with the need to safeguard the heritage and thus adopt such measures as may be necessary.
Already when handing over the work to the contracting firm, the museum needs to assess its type and duration, and decide whether or not it is advisable to adapt the Museum Security and Emergency Plan. Should the museum not have such a plan, the museum management, [15] possibly with the help of a special work group set up for the purpose, [16] needs to carry out a careful risk analysis, identifying the operative, physical and procedural responses, and assigning special control tasks if necessary.
While the work is in progress, it is the responsibility of the contracting firm to take out insurance on any accidents, but as anyone who works in a museum is well aware, an event that leads to the damage, or indeed loss, of a cultural asset can never find adequate compensation. It is therefore more than desirable that all matters relating to security with regard to the presence of temporary worksites need to be taken into consideration in advance, with a budget that also includes extra expenses for the security system while the work is under way. Even before this, the evaluation criteria for the tender should also include the security guarantees offered and the contracting firm should be able to make further improvement proposals, including, for example, the appointment of a contact person from among its staff, [17] with special skills and tasks. The museum can then interact with this person concerning security issues while the work is in progress.

Construction sites and temporary works

When assigning areas for construction, storage, handling, processing, etc., the museum entrusts them to the contracting company, but this does not mean that it has no direct responsibilities. On the contrary, when particular areas or transit spaces are also being used to keep the museum's activities running, the level of attention and control must if anything be heightened.
The regulatory requirement to close these areas to outsiders does not mean that they cannot be used for criminal actions against the cultural property. In particular, scaffolding can facilitate access to the museum, particularly from normally inaccessible upper floors, which are rapidly turned into potential points of access. The scaffolding must therefore be fitted with alarms and protected by fixed barriers, if necessary, to cordon off areas of the museum, with fixed fencing in wood (evaluating the need for it to be treated with flame retardant agents) or in metal, with a minimum height of 2.4 metres at the foot of the scaffolding, and with alarms on the entrances. It is best to complete the security system with a *motion*-detection video surveillance system so as to have a recording of all human movements near the scaffolding or near those

areas of the museum that are considered to be particularly strategic, in order to monitor the construction site when work is not being carried out, at night, during holidays, and so on.
It is also worth considering if the traditional methods used for closing the scaffolding with canvases, which helps protect against falling objects while working, can be replaced by fascia boards and canvases or nets to provide a direct view of the scaffolding, which can be fitted with suitable lighting for monitoring at night. In the case of large, complex construction sites, attention also needs to be paid to road access to the site areas, with the number plates of vehicles and the names of the drivers being recorded both when they enter and when they leave.

Staff

The temporary presence of external staff requires the introduction of protocols designed to ensure that there is no interference between work on the construction site and the museum's activities. If not already provided for, all museum staff should be obliged to wear elements that allow them to be identified immediately. [18] However, also the staff of the contracting company and of any subcontracting companies need to be recognisable and identifiable, through the use of badges with a daily register of all those who enter and leave the site. [19] The register needs to include a special record of access to sensitive areas, for which special authorisation [20] by a museum manager needs to be prepared, if this is considered to be appropriate. These basic measures make it possible to immediately identify any unauthorised persons in the restricted areas or outside of opening times to the public, thus limiting incidents and problems.
In any situation that leaves the museum clearly exposed, it is essential to ensure the active collaboration of all staff, whether internal or external, by means of extra training or special regulations as provided for by the security and emergency plan or by the workgroup.

Points of access

Provisional preparations of the construction site must include the routes to be followed by vehicles and workers, which means there must be precise assessment of the new points of access that will be created in the museum complex. All of these must have locks on the inside or other means of protection and, as appropriate, alarm systems or increased video surveillance and passive protection systems.
It is important to check if the presence of the building site may provide easier access to entrances that are normally considered to be out of reach or not directly connected to museum storage facilities or display areas. These may include dormers on roofs, terrace roofing, roof gardens and small secondary stairs that may not have been used for years.
Crime-prevention measures must not however hinder the possible evacuation of people and museum assets in the event of an emergency, and in each case the ideal solution must be found. [21]

Alarm and video surveillance system

A worksite can be used by the museum as an opportunity to make a thorough assessment of its security system, in order to find potential areas of vulnerability that are often not dealt with during routine maintenance due to a lack of funds. It is evident that the museum's security system may at times not satisfy the new needs brought about by the presence of the worksite, but it needs to make sure that the existing security systems are working perfectly. Checks need to be made to ensure that the video cameras and alarms are not rendered ineffective or inefficient while the work is being carried out In particular, video cameras on outside walls might temporarily be obstructed by scaffolding, or work on the service installations might involve interrupting connections, inadvertently leaving the cameras turned off in some parts of the museum. The control centre of the museum needs to be adapted to the new requirements and members of staff particularly encouraged to report any abnormal operation of the museum's security system immediately. The alarm and video surveillance system specially created for the scaffolding and construction site needs to be checked, even remotely, by the contracting company, using companies specialised in the field of security and in agreement with the museum management on the methods to be used for reporting problems both to the museum and to the police. The aim here is to ensure maximum collaboration and protection of the museum's artefacts.

Procedures

The standard control protocols used by all museums, both large and small, need to be reviewed when a temporary worksite is in place. The management of keys, access to premises, and the closure of the museum must all be the focus of particular foresight: the worksite only increases security problems! In the case of access alarms, it is preferable to use personal codes, for they place responsibility firmly on the individual. A special code can be programmed for the company contracted to do the work, in the name of a single person in charge. In the case of keys, it is necessary to consider the type of key, deciding whether or not to replace the lock temporarily for the time the worksite is open and to give the keys to the contracting company. A copy should be given to the works management or, in the case of simpler, less problematic situations, the lock may later be replaced.
Closing the museum at the end of the day requires particular care by the museum staff: depending on how the work site is run, as well as making the normal rounds of the museum galleries, it is important to check that there are no risks in the areas of the museum that are adjacent to the worksite. Together with the contracting company, it is necessary to carry out a thorough check of holes, worksite premises and spaces that might be used by criminals to hide in order to enter the museum later on. Any anomaly must be reported both orally and in written form, together with the data of the staff involved, in order to help reconstruct any possible criminal actions. If the complexity of the situation so requires, it is generally worth considering special reports to be made on a daily basis.
In the case of night patrols – though not solely in the presence of temporary worksites – it is advisable to have them carried out in a *random* manner, and one which is difficult to ascertain from outside.
If the worksite is due to be open for a long time, it is advisable to review the security systems and procedures on a regular basis, in order not to let down one's guard in a situation that is never either ordinary or predictable.

[1] The availability of stolen cultural assets on the market leads to the interest of criminal organisations devoted to the international trafficking of works of art. In these cases a circle is formed between supply and demand, together with a strengthening and organisation of roles for carrying out the various illicit actions (illicit possession/theft, handling on one or more levels, export; recycling), integrating forms of cross-border organised crime.
[2] Italian cultural property has after all been hit by attacks in the past: these include the bombs placed in 1992 in Via dei Georgofili in Florence, near the Uffizi Gallery, in Rome in front of the churches of San Giovanni in Laterano and San Giorgio in Velabro and in Milan at the Padiglione d'Arte Contemporanea. The first of these, in Florence, also caused some deaths. The individual attack on 24 May 2014 in Brussels and the massacre in Tunis in March 2015, which struck innocent tourists, did not cause damage to cultural artefacts in the museum.
[3] See the circulars issued by the Secretary General on 13 January 2015, no. 1 and on 1 April 2015, no. 11.
[4] Note in particular the publication of the *Red Lists* (see http://icom.museum/programmes/fighting-illicit-traffic/red-list/), lists of categories of archaeological artefacts and works of art in danger, from areas of the world subject to wars, invasions and revolutions, drafted by experts with the support of the US Department of State, Bureau of Educational and Cultural Affairs. The latest editions concern the emergency in Egypt, Syria and Iraq. These tools often make it possible to intercept illegally exported artefacts and to facilitate their return to their countries of origin. Other ICOM initiatives include staff training projects and the selection of observers in the most unstable areas.
[5] Traditional video surveillance system: live viewing and possibly recording; 'smart' video surveillance system: image analysis software able to detect events (e.g. intrusion into an area, removal of objects, abandonment of objects, vandalism), warning the operator.
[6] It is possible to purchase sensors that also detect break-ins involving considerable vibrations (drilling, hammering, staving-in blows). As well as on glass, these sensors can also be placed on doors.
[7] Even though gratings may not be used on the upper floors for aesthetic reasons, effective non-invasive protection devices that do not alter the architectural structure include the fastening of hinges, special materials for the fixtures, screws, opening handles. etc.
[8] In historic buildings, an erroneous conviction has led to the application of physical security devices, in the form of gratings, only on the windows at street level or, at best, on those of the basement.
[9] M. Decr. 37/2008 includes measures concerning the installation of systems in buildings, including:
a) Production, transformation, transport and distribution systems, use of electricity, lightning protection, and systems for the automation of doors, gates and barriers;

b) Radio and television installations, antennas and electronic systems in general;
c) Heating, air-conditioning and refrigeration systems of all kinds, including systems to evacuate flue gases and condensates, as well as ventilation and aeration systems for the premises;
d) Water and sanitation systems of all kinds;
e) Installations for the distribution and use of gas of all types, including the systems used to evacuate flue gases and for the ventilation and aeration of the premises;
f) Lifting equipment for people or things, in the form of lifts, goods lifts, escalators and the like;
g) Fire prevention systems.

Article 8, paragraph 1 states that the owner of the system is to adopt 'the necessary measures to maintain the level of safety provided for by relevant regulations in force, taking into account the instructions for use and maintenance as provided by the installer of the system and by the manufacturers of the equipment.'

[10] The Maintenance Plan was introduced by the body of law on Public Works and, in particular, by Legislative Decree 163/2006, Article 93 and its implementing regulation Pres. Decr. 207/2010 – Article 33 and Article 38. Further specified for the structural parts of buildings in M. Decr. 14 Jan. 2008, clause 10.1, and explanatory Circular no. 617 of 2 Feb. 2009. The plan consists of a user manual, a maintenance manual and a maintenance programme.

[11] A concept taken from the UNI regulations, indicating the item to be serviced.

[12] Such as inspection of the alarm system by the maintenance company at pre-established intervals and daily inspection by the member of staff responsible for closing, which may lead to the reporting of some minor anomaly in one of the volumetric sensors.

[13] Pres. Decr. 412/93, Article 3 in the general classification of buildings indicates museums as class E4(2). It states that if the building consists of separate parts belonging to different categories, these are to be considered separately

[14] In 2008 a fire destroyed the roof and painted ceiling of the Teatro Vaccai in Tolentino.

[15] The administration manager in the case of small museums that have, unfortunately, not yet been properly identified for the purposes of the official Ministerial guidelines of 2001.

[16] These are part of the group coordinated by the director or his or her delegate: the security managers (Leg. Decr. 81/2008), the manager of the control centre of the museum, if applicable, the conservator, the manager of the maintenance of the building and its systems, and an expert on the matter, if applicable. While the work is in progress, it is advisable to have the collaboration of the Cultural Heritage Protection Unit (NTPC), to ensure that all the possible scenarios involving crime prevention have been considered, the protocols put in place, and immediate action prepared in the event of any crime taking place.

[17] The person in charge of the security of the cultural property who, if his or her particular expertise allows, might be the security manager of the worksite, might:
– be in charge of the keys or access codes;
– prepare and assess the alarm and video surveillance systems for the worksite;
– prepare and assess the system for separating the worksite from those parts of the museum that are not subject to intervention;
– warn the museum management in advance of any potentially dangerous work, agreeing on any protection devices or protocols, including rapid removal of the assets to a safe place;
– ensure that the following procedures are respected:
  – registration of staff and vehicles working on the site,
  – daily or temporary closure of the worksite,
  – maintenance and organisation of the worksite,
– identify further problems caused by interference between the work and the protection and conservation system for the artefacts;
– verify the reliability of the contracting company or companies that will have access to areas in the museum from the worksite;
– act as the company's contact person in the event of emergencies.

[18] Reception and cloakroom staff should not only be identifiable by means of a badge bearing the first name, surname and function of the wearer but should also be immediately identifiable, if not by a special uniform, at least by an item of clothing, such as a scarf, a special jacket or similar.

[19] Registration may later prove to be useful in the case of accidents or criminal actions.

[20] These are necessary for operations, even those of routine maintenance, that are carried out in the museum's control centres, storage areas, workshops or places not normally visited by the public, where it is best for details about the security systems not to be widely known.

[21] New emergency routes need to be assessed, eliminating any possible interference with the worksite and putting into place suitable safety measures for them.

EXHIBITION GALLERIES

Museums have changed since the middle of the mid-twentieth century: new relationships with the public, institutional roles, cultural activities and visitor services have profoundly influenced the organisation, distribution and structure of museum spaces, as well as the way collections are shown: [1] no longer just objects on display but rather components of a cultural experience through interaction with visitors, intriguing displays, artistic performances, forms of collective participation and recreational activities bring with them countless ways of communicating, interacting, informing and attracting.

And yet these changes are nevertheless based on two types of museum: new, modern constructions that have been specially designed and built, with examples that have become symbols of a revolutionary approach that contrasts with the traditional idea of a museum, [2] and the adaptation of complex historical buildings that are to be considered as an integral part of the museum heritage, to be safeguarded and promoted also on their own account. [3]

It is clear that these changes, which are oriented towards the public, or rather publics, have tended to side-line the museum's original function, which was to preserve and display artefacts. Today we have dynamic institutions with extremely flexible exhibition routes, and galleries created or redesigned to combine the permanent collection with rotating exhibitions of works from the museum collection.

None of this either reduces or eliminates the problem of protecting the heritage – on the contrary, it increases it exponentially. The new concept of an 'agora-type' museum as a place of encounter, and for the enjoyment and production of culture makes the problem of crime prevention even more complex, in view of the numbers of visitors and the way their visits take place. [4]

In these settings, security needs to be organised by adopting a general, and yet also targeted approach, giving absolute priority to the need to protect the assets and keep them safe from theft and damage.

Location

One of the greatest problems is that of location, and thus of the lesser or greater vulnerability of the perimeters of the museum galleries, also in terms of access from the outside. Every museum is a case apart, and the direct proximity of external gardens, which are typically found in museums built in the mid-twentieth century, is very different from that of galleries created in the aristocratic apartments of historic buildings that have been turned into museums, and from the ideal situation of buildings designed from the ground up as museums.

In the case of many historic buildings that have been converted into museums, the design project has not always adopted an integrated approach to security and simply relies on the introduction of passive and active protection systems. And yet this consideration, especially in the case of particularly precious assets, is worth bearing in mind. It is preferable to have the museum galleries in the innermost areas of the buildings, if possible with no openings that give onto the outside, especially if they are hard to monitor and, in any case, it is important to locate the works of greatest value in the areas least vulnerable to access from outside, both from within and from without, [5] while also ensuring that they can be rapidly moved to safe places in the event of environmental emergencies.

The exhibition route

The exhibition galleries in the museum form part of a more general layout, depending on the particular requirements of the museum, which are far more complicated now than they used to be. The two approaches to directing the flow of visitors – with a fixed circuit or an open one – depend on the

dimensions involved, but also on the display history of the museum and on the advisability of respecting it in order to illustrate its history. [6] The type of route adopted is a fundamental factor in terms of security: a fixed route, which is normally linear, with separate entrance and exit, though it may be circular, beginning and ending in the same place, allows for greater control both during visits, when the museum is open to the public, and during security patrols when it is closed. A free layout, on the other hand – in a whole variety of architectural spaces linked to each other in different ways – makes monitoring more complex. This is because the public can move about more freely and also because checking open architectural spaces is more difficult when closing the museum. [7] In any case, quite apart from the individual features of the building, it is important that the routes be as separate as possible, avoiding the intersection of functions other than in exceptional cases, in areas that are considered strategic for the distribution of visitors. This ensures that visitors do not come by chance to service areas, such as technical rooms, with the risk that they might tamper with the equipment, or to offices, which may contain keys and confidential documents.
Exhibition routes must have an automatic compartmentation system both for the security and safety of assets and people in the case of fire or other emergencies, and so that particular areas can be closed immediately in the case of theft, thus preventing the thief or robber from reaching the outside and escaping. In protected historical buildings of great value, this naturally requires complex and often invasive works, but it is one of the priorities to consider when starting any museum project.
Another key aspect of contemporary museum design must also be dealt with: the directions to take through the spaces must be immediately clear for the visitor, who must deal with the fact that direct escape towards the outside is not permitted. [8] The presence of emergency exits must be taken into careful consideration, fitting locking devices that can be activated when a theft alarm goes off on those that lead away from galleries that contain particularly precious artefacts.
On a more general level, all emergency exits must be fitted with alarms and monitored, not allowing use in normal situations.

Showcases

Display showcases are designed to ensure maximum security for the items they contain, both in terms of their conservation, since they provide the best microclimatic conditions, and to protect them from theft, tampering and vandalism. For the purposes of museum management, the showcase must be lightweight and invisible as far as the items on display are concerned, making sure that – as is sometimes the case – what is on show is not the showcase itself, but rather the items it contains.
Depending on the items they contain, showcases can provide levels of security that may be higher or lower according to the thickness and stratification of the various types of glass, ranging from simple bullet-proof security glass to the absence of any break in the transparent areas in order to prevent tampering with burglary tools, the use of inaccessible hinges, rails and other devices to prevent the showcase from being opened, through to the use of key-operated or electronic security locks and the incorporation of protected electronic alarms and remote controls.
Depending on the value of the items on display, the alarm systems may be used for the showcase and/or for the items themselves, through the use of sensors that form part of a system of concentric circles of security measures. [9]

Display units

Works displayed on plinths or hung from the walls, which cannot be fully protected by glass for display reasons, can be isolated at a suitable distance by using barriers with alarms that are clearly indicated to the public, as well as by sensors that warn of any movement. Even in the case of small objects that are not of great value, it is important that they should be fastened to supports using screws that, as well as preventing rapid removal, require the use of tools not normally at the disposal of museum visitors.
For exhibition purposes, museum-management concerns sometimes require the use of fitted walls, on which artefacts and communication or technological instruments are placed together to provide an overall view that involves a certain degree of interaction with the visitor. Assuming that such devices may be used for artefacts of limited value, it is nevertheless necessary to provide transparent protection for the items and to fasten them securely with screws to their supports, as well as fitting them with alarms to warn of their removal. If the items (of lower value) can be touched and moved, it is wise to consider attaching strong steel cables or springs.

Devices to protect against vandalism

Museographical solutions such as fitted walls, display units and open shelves can naturally provide no protection against acts of vandalism that are impulsive and rapid. In any case, a distinction should be made between visitors who tend to damage items secretly and those who intend to make a spectacular gesture with great media impact. In the first case, continuous direct surveillance, alarm systems and CCTV may be excellent deterrents on their own. In the second case, generally against works of great symbolic value, [10] only direct protection can prevent works from violent blows, thrown objects, acids or inflammable liquids, and against spray paint. Some famous museums search visitors and require bags to be deposited at the entrance, in order to restrict the introduction of objects and materials that could be used for vandalism.

Alarms

Adapting museum galleries to cater for security concerns requires absolute effectiveness, maintenance of efficiency, aesthetic integration and, in the case of historic buildings, the absence of invasive features. The choice of alarm systems, as of service installations in general, must ensure long-term efficiency that requires the simplest possible form of maintenance and excludes false alarms and faults, while ensuring flexibility for later adjustments and technological advances.
In the design project, the alarm systems are based on the principle of concentric protection, both when opening and closing the galleries.

SPACES FOR TEMPORARY EXHIBITIONS

For many museums, temporary exhibitions have become one of the main means of attracting visitors. These events are the best way to introduce significant forms of interaction and help illustrate the research and work carried out by the institution. In the reorganisation of their spaces, museums have begun not only to move towards increasingly flexible displays of their permanent collections but have also put the creation of spaces for temporary exhibitions among their top priorities. These exhibitions are designed to engage the public, attracting the greatest possible number of visitors in a short period of time, and this often leads to complex problems. It should also be borne in mind that the increased appeal of the items on show [11] can also attract criminals, who are prepared to make increasingly sophisticated plans for theft, based on heightened levels of aggression [12] and/or exploiting shortcomings in the organisation which they have detected in advance.
Management of the public requires not only adequate protocols but also an organisation of the spaces that takes into consideration the points of entry, transit areas, places where the public will congregate, surveillance systems and compartmentalisation. Guarantees concerning the security of the host facility are also a factor of credibility among lenders and a decisive element for insurance companies when deciding on policies.
Putting on internal exhibitions involves fewer security problems, since it is the institution itself that organises them and, as such, it is fully aware of the levels of security in its own facilities, as well as of the need for extra measures due to particular display installations and to the decision to show works of greater value and the extra risks brought about by the increased number of visitors in the galleries. In the case of external loans, the complexity may be much greater, due to the need to comply with the requests of the lenders, who require measures to ensure maximum protection of their artefacts.
In any case, the security of the exhibition galleries is considered by lenders in terms of the security of the entire complex and, for this purpose, a facility report on the museum that hosts the exhibition needs to be drawn up.

Location and characteristics

Exhibition spaces are normally on the ground floor or in wings of the museum complex that allow for separate entrances and exits from those used for the permanent collection, thus making it possible to have separate ticket offices. [13] Any external entrances and exits are best eliminated, unless they are strictly necessary for the evacuation of people in the event of an emergency, in which case they must be in the form of fire doors fitted with alarms. If possible, these exits should not lead directly outside but rather to compartmentalised transit areas leading to escape routes, suitably monitored also during the chaos that might occur during an emergency. Especially in the case of museums that might put particularly tempting treasures on show, it is generally best for the entire exhibition space to be compartmentalised, in order to thwart any attempts at escape in the event of theft. Exhibition settings need to be fitted with alarms and video surveillance and, in any case, with gallery attendants, who should preferably be placed close to the emergency exits.

Display installations

The design of display installations for exhibitions needs to take into consideration the characteristics of the areas involved. Recent museum renovations have generally aimed to reformulate or create from scratch settings that are extremely flexible, in which both physical and technological monitoring is normally facilitated by the greater overall visibility both the premises and the objects on show. Care is taken to avoid create hidden areas and to protect the works and artefacts with security devices (glazed showcases with security locks and alarms). In the case of small exhibitions in a number of rooms, particular care needs to be paid to securing the objects in place and carefully arranging a CCTV system.
In some situations, it is important to take into consideration the symbolic value of some artefacts, which might make them the target of vandalism. In these cases, it is necessary to provide for glass protection, anti-climb barriers and barriers fitted with alarms placed at a suitable distance in the display installation project.

Showcases and display units

When artefacts are on loan, the problem may arise of supports and frames that do not provide the required levels of security and which, to preserve the integrity of the artefact, cannot be replaced or modified. A solution in these cases might be to protect the work with a glass or plexiglas 'shell' (depending on the level of security required) which in no way prevents it from being seen. These devices may also be fitted with alarm sensors that immediately warn of any breakage.

Temporary storage

After transport, the acclimatisation period for works on loan requires a special room with a suitable microclimate. The cases are left closed for some days in this room if this is required by the lender. The room needs to be fitted with an alarm and monitored in order to prevent theft, also due to handling operations and to the presence of occasional staff, who must always be identified and authorised. All works that enter a museum must be identifiable also when still packed, so that their exact location can be followed as they are moved around the facility.
Setting up an exhibition is a delicate operation due to the presence of a number of people (display installation companies, technical staff, restorers, craftsmen, etc.) in a situation that is often one of confusion and stress. It is therefore important for a member of staff to be given responsibility for following the handling and positioning of works and for watching over them if they are left in unprotected locations even just for a few moments.

The visitor care system

As well as problems concerning the spaces for temporary exhibitions, it is also advisable to consider all issues involved in the organisation of these activities. Queue management, rules of access to the site, and the custody of parcels and bags all need to be taken into consideration, to make sure that they do not provide favourable circumstances for criminals.
As well as potentially being sources of intentional distraction of the surveillance staff, if queues are not well placed, they might prevent artefacts from being taken to safety in both environmental and criminal emergencies.
Bulky bags introduced into the exhibition spaces might be used for theft, both for holding artefacts and for introducing tools that can be used to carry out criminal activities. A cloakroom should therefore be provided for such bags and parcels.

Standard Facility Report

EXHIBITION
Title:
Location:
Organising institution (name, address, references);
Duration:
Days open per week:
Opening hours:

1. *General information about the exhibition*
Address:
Ownership:
Management:
Period of construction and history of the building (with the date of conversion to an exhibition venue):
Last renovation and modernisation of the service installations:
Construction features of the building:
Normal use (museum, etc.) and secondary use (storage, offices, auxiliary services):
Total area of the building:
Total area of the exhibition spaces:
Points of access:
Activities, other than the exhibition, which take place in non-compartmentalised areas in the building (specify which):
Exhibitions put on in the past 3/5 years (including a list of museums that have granted loans):

2. *Exhibition galleries*
Description of the exhibition galleries to be used for the exhibition (layout, dimensions, points of access) with ground plan attached:
Natural lighting (indicate if present and the type of screen used to filter UV and IR rays):
Type of lighting system in compliance with IEC or equivalent regulations (natural, incandescent, fluorescent, approximate daily exposure to light and fluctuations in lux per type of unit):
Climate-control system (indicate if present):
Microclimate control (type of humidification and dehumidification used, presence of thermohygrographs or data-loggers, daily values and relative humidity and temperature):
Visitor-flow control system:

3. *Display units*
Type and specifications of display units:
Microclimate containers:
UV protection:
IR protection:
Light intensity:
Showcases without air conditioning:
Supports without showcase:
Other:

4. *Security*
Intrusion- and burglary-prevention system (indicate connection with police, if provided):
Fire-extinguishing system (safety of the installations and materials; existence of active smoke-detection systems and acoustic fire alarms; extinguishing methods used; lightning protection; training of staff in emergency plans and use of fire extinguishers):
Protection of artefacts (showcases, alarms, etc.):
Security system (number of attendants per shift, floor and gallery; security staff supervision during closing hours; CCTV system, if present);
Written protocols for security and emergency plans (indicate if present):

5. *Temporary storage*
Description of the premises (floor, size, points of access):
Type of lighting in compliance with IEC regulations or equivalent:
Microclimate control:
Fire protection:
Security:

6. *Procedures for the collection and delivery of works*
Access limited to authorised personnel during mounting and dismantling
Supervision and counting of works during installation and exhibition
Registration of internal handling and repositioning of works in the exhibition area:
Closure of the exhibition area and implementation of security measures when staff are not present:
Method adopted for regulating access to storage facilities:
Signing out of works from the building (indicate the name of the person responsible):

7. *Procedures for handling, unpacking and assembling works*
Area assigned for operations:
Personnel and methods used:
Use of technical staff and/or restorers to examine the state of conservation of the work and for handling and assembly:
Names of those responsible for the operations:
Availability on site of equipment for handling the works:
Availability of a goods lift:
Presence of stairs on the transit route:

Source: *Registrars Committee of the American Association of Museums, 1998*

STORAGE FACILITIES

Storage facilities have always been considered primarily as having a conservation function. [14] The museological approach adopted in the early twentieth century led to a smaller number of works being displayed. This made it essential to create sufficient spaces for storing works that were not on show. In the most prestigious museums, [15] these spaces provide ideal conditions of security and conservation both for objects of value and for particularly vulnerable objects which, for conservation reasons, cannot be put on permanent display.
Over time, also smaller museums have acquired greater sensitivity in considering these premises not just as makeshift shelters while waiting for their exhibition spaces to be enlarged, but for the potential they offer to make the most of their collections. The need for storage facilities depends not only on the inalienable nature of public collections and of policies to expand them, but also on the special relationship that exists in Italy between museums and their local area. This means that museums have the innovative role of territorial protection, often storing the movable cultural objects that are at risk of theft or damage. This means that, in the spirit of the French *réserve,* these storage facilities contain collections from which elements can be taken to provide new opportunities for research and knowledge, by putting on temporary exhibitions and attracting the attention of a specialised public.
This evolution in the use of storage facilities brings with it the need for greater attention to security. [16] Also in the way they relate to scientific events organised together with other cultural institutions, the exhibitions put on by museums and the consequent moving of works, as well as their opening to a specialised public, however limited, through to the extraordinary opening of storage facilities to the public have all made it necessary to re-examine the location, physical organisation and service installations and management protocols applicable to these spaces. [17]

Location

Italian museums are containers of great historical prestige that at some point have been turned into museums, and the choice of storage facilities is thus often based on the availability of space. In any case, the location must always be assessed on the basis of the museum's new needs for the public and for protection against both environmental and human risks. It is clear, for example, that facilities cannot be placed in basements if there is any risk of flooding or of damage to the water mains systems that are generally present on these floors, while attics bring with them a greater risk of fire. Management difficulties brought about by premises away from the museum complex must also not be underestimated. Also premises that are adjacent to other properties or to premises with outsourced service functions must be excluded, in order to ensure constant security of the perimeter areas.
Depending on the size and activity of the museum, storage facilities can generally be classified as warehouses, [18] purpose-designed depots or vaults, with the following nearby: workshops for routine maintenance and conservation and restoration, and spaces for handling works of art in transit for exhibition activities. The first workshop may be placed near the exhibition site, especially if the restoration activities are open to public view. Depending on the importance and frequency of exhibitions, in the second case it might be essential to have direct access from the outside, for receiving and delivering works. This is to be considered as an element of risk in terms of security.

Points of access

Limiting the number of points of access to storage facilities must take into account the need for rapid evacuation of the works in the event of an emergency. What constitutes a potential threat in terms of crime prevention actually turns out to be a strength in the event of serious emergencies. It is therefore best to ensure the presence of large exits that can be opened from inside, properly equipped with alarms, for evacuating the works. In special cases, it may be worth assessing the possibility of combining alarm systems and methods to lock the emergency exits in the case of unauthorised entry. For staff and scholars, it is best for there to be just one access with a lock that can be opened from the outside and, if this is not possible, the locks should have a single key with monitored duplication. [19] The characteristics of vaults for holding works of art of great value are normally very different, for they are fully armoured, with a single access by means of an electronic combination lock.
If there are windows in storage facilities with suitable emergency exits for the works, it is best to insert gratings properly fastened to the perimeter walls, assessing the advisability of fitting them with alarms.

Lighting

Especially in the case of sensitive materials, conservation requirements call for darkness in storage facilities. This requires the use of special technologies for the security cameras. A service light for staff needs to be provided: it should not create areas of shadow along the way and it should illuminate any alarm and detection devices (both for security and for fires) so that staff can carry out routine checks.

Ventilation

The law requiring natural ventilation openings equivalent to 1/30 of the size of the floor area or two complete changes of air in the environment per hour using mechanical means needs to be checked to make sure there are no areas of vulnerability. The openings must be equipped with passive protection devices such as gratings. Any air ducts must be of a size that does not permit their use for criminal purposes.

Surveillance

One of the greatest problems facing small and medium-sized museums is the absence of constant, periodical monitoring of storage spaces. This real difficulty facing small institutions can to some extent be tackled by installing suitable control systems. Monitoring should be noted down in a special register, with the personal data of the worker, the day, the hour and any anomalies that may be detected.

Control and alarm systems

The choice of the most suitable control and alarm systems is based on an assessment of the importance of the artefacts to be protected and on the means of access and use by accredited scholars or, in some cases, by a broader public (for example, during special openings). This analysis will be reflected in the choice of video surveillance system for the points of access, the volumetric sensors in the premises, the burglary-prevention sensors on the openings, magnetic contacts and showcases with alarms and shatterproof glass for special items.

Organisation and management

Organisation and order in storage facilities is an essential part of security, since it facilitates periodical stocktaking and makes it possible to rapidly verify any changes that have been made. As well as the necessary inventory of items in the storage facility, the arrangement of objects in special containers (be they drawers, shelves, showcases or safes) needs to be indicated also in the register, with photographs that show the exact location of the objects. [20] Should any item be moved for maintenance or restoration, or for internal or external exhibitions, a card signed by the person responsible for its removal should be put in its place, identifying the object, its new temporary location and the probable date of its return, in order to facilitate periodical checks.
Every access to the storage facilities must be recorded in a log, indicating the day, hour and personal data of those who enter and the reasons for their visit. If the storage facilities are opened to the public, particular care must be paid to the devices that fasten the items in place, or the items should be placed in special closed showcases. If there are safes with combination locks for precious items, they must be fastened to the floor or walls.

READING ROOMS IN ARCHIVES AND LIBRARIES

The theft of, and tampering with documents and books is more frequent than that involving works of art on display in museums and galleries. Direct contact by users with reference materials, often for long periods of time, coupled with the small size of the objects, makes them easier to hide. Having a number of people in the room, and thus with the difficulty of constantly monitoring each reader, increases the level of risk for this type of artefact. In addition, there is less awareness of the damage caused to the community when a document or a book is removed, compared with the theft of other objects of evident artistic and economic value and this may mean that the criminal nature of the action is underestimated.
For this reason, such institutions need to consider extra security procedures over and above those normally used for museums.

Identification of users upon entry

Persons entering for the purpose of study, research or any activity that involves direct, personal use of the artefact, must be identified by means of a valid ID document (identity card, driving licence, passport or other equivalent document). If the institution issues access cards, identification may be made when they are issued; otherwise identification and registration must be made at every entry.

Registration of visitors upon entry and exit

It is now standard practice to record the entry and exit of users automatically (by means of a card with a photograph or an access badge) or on paper. In the latter case, registration is entrusted to members of staff who also identify the user, or it is entrusted to the users themselves who, under the supervision of the staff, write their first name, surname, card number, reason for the visit, time and signature, upon entering and leaving.

Ban on the introduction of bags, trolley cases and overcoats

This ban covers all objects that might be used to hide items requested for consultation.
It is suggested that the institution should have these objects placed in special cabinets before allowing access to the rooms where items are distributed and consulted, or in any case that any objects that the user intends to take with him or her (including their own books, computer or other technological equipment, when permitted) should be checked).

Regulations concerning access to precious books and documents

The level of access to documents and books must be proportional to the characteristics and type of objects concerned and to the quality of the user. Access to rare or particularly important documents and manuscript and printed volumes must be allowed only in separate rooms, or in any case under adequate and constant supervision, and only for those who can demonstrate particular expertise or qualifications, or who have suitable credentials from institutions that are known and trusted (such as a letter of presentation from a university which accredits a student).
In those areas where it is possible to have access to items of great value, the use of ink-based writing instruments should be banned and, in those archives or cultural institutions that contain individual sheets of paper, all unbound sheets should not be permitted (to prevent manuscripts from being mistaken for personal sheets of notes when the visitor leaves).

Unequivocal association between the user and the item requested for consultation

In view of the often considerable number of people present at any one time, each item must be associated unequivocally to the individual user, who may also be assigned a particular place for consultation. This makes it possible to check that, upon leaving, the visitor has returned all the materials requested for consultation.

Constant surveillance of areas open to the public

Irrespective of the status of the users and the familiarity that staff may have with them after regular visits, all those who access the library or archive must be constantly monitored by one or more persons responsible (observation from a fixed location, or observation while moving around the room) or through the use of a video surveillance system.
The items made available to readers must be checked both when giving them out (to examine their condition) and upon their return, to rule out any damage (in the case of archival documents, books or cultural assets in general) or theft (especially in the case of archive documents, when the user is given entire bundles, the absence of an envelope or a sheet might escape notice during a superficial check, so at least the number of sheets should be noted both before and after use).
Upon departure, even if only temporary, the user must be checked to make sure that he or she is taking only the personal materials that were authorised upon entry: in particular, it is essential to check portable computers (including the battery housing, the CD/DVD unit and the peripherals), books (whether personal or lent), notebooks and all personal effects that might be used, depending on the size of the items consulted or made available in the room, to conceal anything that might have been stolen.

Stamps on documents and books (on a number of pages, in the case of the latter, and not just on the flyleaf) where possible, together with the inventory and press-mark number, are sufficient security measures to ensure that visitor surveillance staff can be sure that, except in the case of authorised loans, the items cannot leave the building.

Anti-theft systems

In order to improve security and automatically detect theft, at least those books that are freely available for reference can be fitted with antitheft systems, and the exits from the building equipped with effective protection systems with acoustic alarms. Just as RFID microchips can effectively protect documents (the removal of which must be clearly ascertainable during the exit controls), it is also possible to treat the paper of archive documents with chemical substances that can be detected by a so-called artificial nose Application of these systems on all documents and books is still very expensive, and it must be assessed and authorised by the superintendencies if the operation concerns items of cultural heritage. Their use can, however, be considered for archives and libraries that contain materials of considerable importance.

THE CONTROL CENTRE

The control centre is the heart of the security system, for this is where video and alarm signals, as well as reports from surveillance staff are received; if it also includes the environmental monitoring systems, it really is the security centre of the museum.
Traditional video surveillance systems, (with live displays from the cameras) or, better, the 'smart' kind (with image analysis software that can detect events as a violation of an area, the removal of objects, objects left unattended, and vandalism), with local or remote recording, give the security operative the ability to constantly monitor the day-to-day life of the cultural institution, if necessary calling for the intervention of other security staff and the police.
The room (which is sometimes the guard room) that contains the control units for this equipment and generally also contains sets of keys for the whole facility should be:

– in a protected place that nevertheless allows for immediate and rapid action by staff in the event of an alarm;
– equipped with effective physical protection to prevent unauthorised access, ensuring the safety of personnel on duty;
– provided with an uninterruptible power supply for the terminals of the alarm and video surveillance systems.

Since it is constantly occupied, the room must be suitable in terms of safety requirements, space, organisation, ergonomics and liveability. It should contain all the materials needed for dealing with emergencies of all kinds and full documentation on the security and safety of the museum. The documentation is to be kept in a safe, in museums where the collections are of particular prestige and value. Even though it is inside the museum, the control centre should be fitted with laminated safety glass and a door with access control.
The importance of the control centre in terms of museum security means that the staff who work there need to be highly experienced, of absolute trustworthiness and qualified to use alarm systems and video surveillance correctly and completely, also in terms of comprehending the significance of the incoming videos. [21]
It is therefore appropriate that, during negotiations for the supply and implementation of these systems, a training course should be held for the staff who will be using them.
In many small facilities, the initial investment cost and, to an even greater extent, staff costs and the time required for servicing the equipment tend to mean that these services are outsourced, while maintaining a point of surveillance of the camera monitors during opening hours and, when the facility is closed, moving the service to a remote control centre at the police station or at private security companies that can guarantee a rapid response in the event of an alarm.

[1] See Italian Ministerial guidelines of 2001, cit. In *Sector VI: Management and care of collections – Subsector 4* – Regulations concerning permanent and temporary exhibitions. The Technical Standards specify that each museum should establish and periodically check the criteria that govern both the temporary and permanent display of artefacts, and their conservation and consultation in storage facilities, depending on the following requirements:
a) The availability and security of the premises;
b) The conservation and viewing of the collections;
c) Respect for the history and mission of the museum.
The selection, ordering and display of artefacts in the permanent display must be based on an in-depth historical-critical study, which motivates the choices made and justifies any changes to the existing situation, which must in any case be documented. The project should have the following objectives:
- The selection must balance the need to give public access to the largest possible number of works with that of highlighting the essential features of the museum;
- The order has to be logical, comprehensible and coordinated with the display design adopted for the spaces;
- The display must be easy to follow and show the artefacts to their best advantage, minimising any risk of damage.

[2] The Solomon R. Guggenheim Museum in New York, designed by Frank Lloyd Wright in 1937, the Centre G. Pompidou in Paris, designed by Renzo Piano and Robert Rogers in 1977, and the Guggenheim Museum in Bilbao built in 1997 to a design by Frank Gehry.
[3] With a wealth of examples of Italian museums not only from the first half of the twentieth century, which left some of the very finest examples, but even more so in the recent history of adaptation of convents, palazzi, factories and other unusual and not always appropriate premises converted into museums.
[4] This mainly refers to the great museums (like the Metropolitan, the Louvre and the Vatican Museums), in which the influx of visitors is enormous, with critical situations brought about by the concentration of visitors in particular rooms or at certain times of day.
[5] Examples include internal cloisters covered by skylights, the access to which from outside is not the same as from the inside, when the criminals make their escape.
[6] Famous examples that have become part of the history of museology, such as the Museo di Castelvecchio in Verona, by Carlo Scarpa, or the Museo di Sant'Agostino in Genoa, by Franco Albini.
[7] One sensational example in Italy was, as mentioned, the theft in 1998 from the Galleria Nazionale di Arte Moderna in Rome, where criminals hid until closing time and took advantage of the changing of the night watch.
[8] See the rapid escape made by the criminals in the case of the theft of *The Scream* and the *Madonna* by Edvard Munch, which were stolen in Oslo in the summer of 2004.
[9] Objects of great material and symbolic value naturally need to have the highest level of security protection, preventing the work from being damaged or stolen and, at the same time, making sure that it can be rapidly protected in the case of environmental emergencies.
[10] One spectacular attack was by Laszlo Toth, a Hungarian-born Australian geologist who got past Vatican security in St Peter's and managed to hit Michelangelo's *Pietà* fifteen times with a hammer, causing serious damage. Since then, the work has been protected by a shatterproof glass wall.
[11] Communication campaigns for these shows reach out to ever greater audiences, pointing to the temporary presence of objects whose uniqueness and value is often promoted as of huge importance for the museum that puts them on display.
[12] Armed robbery that involves action against the staff and in some cases also the public, counting on the effect of surprise and the rapidity of a grab-and-run action during opening hours.
[13] Even though recent trends in some museums with outsourced management of exhibitions – such as in the case of the Capitoline Museums in Rome – include the anomalous inclusion within the museum of exhibitions for which a fee is charged.
[14] The aforementioned *Ministerial guidelines* (M. Decr. of 10 May 2001) repeatedly refer to the storage facilities. Particularly in *Sector VI: Management and care of collections,* the general principles for collections stress the need for proper storage in special facilities. The building must be fitted with suitable security measures for works in storage and, ideally, the works and artefacts in exhibitions should be rotated, thus allowing for public viewing of all items, while always fully addressing security concerns.
In its definition of museum policies concerning the expansion and inalienability of the collections, *subsector 4.2* requires spaces to be provided that can ensure 'proper storage in storage facilities that allow for viewing, with all the appropriate safeguards', excluding, except in exceptional cases, the possibility of the museum acquiring objects that it is unable to catalogue, conserve, store or display in an appropriate manner.
Subsector 4.4, on the regulation of permanent and temporary exhibitions, governs the use of storage facilities, which must ensure the security of the artefacts in terms of both the conservation and the use of the collections, while also allowing for rotation of the objects.
It states that '*The arrangement and storage of artefacts in the storage facilities shall be planned in such a way as to ensure rational use of the spaces and control of the storage conditions and security of the works.*' Focusing on consultation and viewing: '*access to the storage facilities by the public and staff not directly concerned shall be regulated and monitored. The consultation of objects that are not on display should in any case be guaranteed, while ensuring security conditions, according to established criteria that are to be made public.*' The guidelines also state that there is an obligation to *'draft written protocols for the registration of the movement of objects'*, providing for *'inspections and surveillance also in the storage facilities'* as well as in the exhibition galleries.
[15] Only 7% of the Hermitage collection in St Petersburg is on display, 8% at the Guggenheim in New York, 9% at the Prado in Madrid, and 10% at the British Museum in London. (G. Candela and A. Scorcu, *Economia delle arti e della cultura: Analisi economica e istituzioni*, Bologna, Zanichelli, 2004). Concerning the 60% indicated for the Louvre, it would be necessary to assess the effect of the museum's cultural policy of franchising.
[16] The *Ministerial guidelines* outline which instruments are available on the technical level: passive barriers against criminal actions, devices based on technology and rapid law-enforcement intervention.
[17] It should be pointed out that in the guidelines for emergency plans published in the MiBAC Circular 32 of 2004, storage facilities for cultural artefacts are indicated as areas that are subject to particular risks. A perfect example of the organisation of storage facilities, in terms of conservation, use and security, can be seen in the Galleria Nazionale d'Arte Moderna e Contemporanea in Rome, see Tomassi B., *L'ordinamento del deposito XIX secolo oggi aperto alla consultazione del pubblico* and Liguori A.M., *'I lavori di ristrutturazione del deposito 'Pannelli di ferro"*, in *Belle Arti 131*, online magazine no. 1, 2012, www.gnamdrive.beniculturali.it/gnam/GNAMdaleggere/BelleArti131_1
[18] Storing archaeological finds from an excavation can be very problematic from many points of view: it can be very complicated due to the huge number of objects, to the speed with which they accumulate, and to overcrowding, stocktaking problems and the ability to monitor the state of conservation, as well as of handling, of the objects. Some interesting experiments have been carried out in this sector with computerised catalogues complete with special technologies for automatic location detection (Elizabeth J. Shepherd – Enrico Benes, *'Enterprise application integration (eai) e beni culturali: un'esperienza di gestione informatizzata assistita dalla radiofrequenza (rfid)' in Archeologia e Calcolatori* no. 18, 2007, pp. 293-303).
[19] In many cases, the manual system is replaced by a sophisticated electronic locking device, biometric recognition technologies using fingerprints or voice recognition. This is done by means of a reader that transmits the data to a unit that verifies the validity of the information and sends the opening command to the lock mechanism.
[20] The latest software systems also enable remote detection using a PDA.
[21] One of the critical issues detected is that of video extrapolation. The system must allow for real-time viewing of what is happening

in the facility and along its perimeter as well as for making the images immediately available if the police should so require. The compression and coding of the video frequently means it is impossible to view the files using normal video software. Entrusting maintenance of the system to a company other than the installer, who has the decompression and decoding programme, may compromise this procedure or, at any rate, slow down its implementation. Considering that once the crime has been committed, the intervention of the police will also involve an analysis of the videos, the tender for the supply and/or maintenance of video surveillance systems must also ensure that the images can also be extrapolated by the operator and viewed by anyone without encountering any software problems.

DOCUMENTATION OF ASSETS

A full understanding of what is housed in museums, libraries and archives can be ensured only by identification based on rigorous technical and scientific criteria. The human and economic resources that this approach entails, together with the duration of the implementation time, which is not always compatible with the need for instant knowledge (which needs to coincide with the acquisition of the item itself), makes it possible to agree with the decisions of those who adopt and promote more 'expeditious' forms of filing. While they should not be considered as alternatives to catalogues based on more sophisticated scientific criteria, all forms of inventorying of individual items that contain essential information so that they can be unequivocally identified are nevertheless sufficient from a security point of view.

Object ID

Object ID is designed to facilitate the identification of an object in the event of theft (for rapid inclusion of the stolen work in the databases of the police specialised in the protection of cultural heritage, so as to ensure effective search and retrieval). It is the international standard for a non-specialist description of cultural objects, since the Object ID can be filled in by anyone. The result of a project launched by the Paul Getty Trust in 1993, the Object ID was first presented in 1997 and its use is also advocated by UNESCO, Interpol, the European Union, the CC TPC, the FBI, Scotland Yard and ICOM, which holds its (non-exclusive) rights at the international level. Starting out from the cursory forms of indexing that already existed and taking into account the results of international meetings of experts, together with the opinions of specialised police forces, Customs officers, museums, associations of antique dealers and insurance companies, the Object ID standard has become established not only for use by private owners of cultural objects but also:

- in smaller museums, as a stocktaking system that, for security purposes, can be used when a scientific catalogue is not available;
- in larger museums, when other suitable documentation is lacking, to identify new acquisitions while awaiting scientific indexing;
- in countries where photographs are not included in official catalogues, or where not all the data required at the international level for the identification of the cultural object is necessary, to complete the national filing system.

Instructions for filling in the form [1]

The official Object ID form, which is to be considered as a key instrument in combating illicit trafficking of cultural property, is divided into categories:
- Type of Object;
- Materials and Techniques;
- Measurements;
- Inscriptions and Markings;
- Distinguishing Features;
- Title;
- Subject;
- Date or Period;
- Maker.

To ensure effective detection and recovery by means of automatic searches for images in databases of stolen objects, it is recommended that the text be accompanied by general and detailed photos of each artefact, paying particular attention to those details that might assist in identification.
Bearing in mind that the chances of recovering stolen cultural artefacts are directly proportional to the completeness and quality of the available data, the compiler is advised to write the description in accordance with the criteria indicated in the box. It should be borne in mind, however, that images can always supplement and, in some cases, even replace the written description.

How to fill in the Object ID form

CATEGORY 1: TYPE OF OBJECT
This must answer the following question: What kind of object is it? The answer may be just one word (painting, sculpture, ceramic, clock, mirror, etc.); in the case of synonyms, it is best to employ the most commonly used term, with the broadest meaning.
Only if the compiler is sure about the description can the field include a phrase that, starting from the generic term, progressively indicates the subset:

Example 1 *Broadest category*: vase;
Subset: crater;
Specification: Apulian;
Further specification: red-figure;
Full descriptive phrase for the type of object: vase, crater, Apulian, red-figure, or simply red-figure Apulian crater.

Example 2 *Broadest category:* painting;
Specification: altarpiece.

Example 3 *Broadest category:* document;
Specification: letter.

For a composite object or one that consists of several separated or separable parts (one of the methods used to make the identification of stolen cultural artefacts more difficult is that of making physical changes to it and selling the individual parts separately), the artefact needs to be described as a whole while also describing each constituent part. Among the various possible solutions, even though more time-consuming, secondary Object ID forms should preferably be filled in for each separate or separable component. These should then be linked to that of the artefact as a whole. Pictures of details may, however, be a viable alternative.

Example 1: *Tea set consisting of teapot, sugar bowl, milk jug, four cups, four saucers, four teaspoons;*
Example 2: *Book with plate engravings;*
Example 3: *Painting with frame.*

CATEGORY 2: MATERIALS AND TECHNIQUES
This must answer the following questions: what material is the object made of? What technique was used?
For each object or for each component, the materials may be indicated in general terms, even if a specific indication is most effective (walnut in place of wood; bronze rather than metal). When any doubt involves only two materials, both should be specified, indicating that they are alternatives (bronze or brass). Similar precautions should be taken when indicating the technique used to make the artefact: if this remains uncertain, it is preferable not to fill in this field. Any incorrect indications (tempera instead of watercolour; canvas instead of wood) may hinder detection, identification and recovery.
Indications as to the colour of the artefact may be included in this category. In the case of artefacts with a number of colours, it is preferable not to indicate the colours or, at most, to indicate only the dominant one.
In the case of books, in addition to the material and the type of writing (parchment or paper; handwriting or print), the compiler is advised to:
Indicate the number of pages (numbered and unnumbered; written and blank, such as flyleaves);
Describe the binding (sixteenth-century, all parchment; half leather and banding; embossed decorative motifs on the fascias and on the spine, with original clasps; Venetian in red morocco leather, title and gold vignettes on the spine, double gold panel on the boards).

Example 1: *Oil on wood;*
Example 2: *Hand-crafted ceramic with embossed lid in silver gilt;*
Example 3: *Lithography with screen printing in 21 colours.*

CATEGORY 3: MEASUREMENTS
The measurements to be indicated depend on the type of object in question. In all cases, however, it is necessary to specify the unit of measurement (centimetres, metres, grams, ounces, etc.) and to which dimension the measurement refers (height, depth, etc.). As for the other categories, precise indications are most effective and, if this is not possible, the term 'approximately' or 'estimated' must be added.
Paintings, prints, drawings: measure the height and width, specifying if these refer to the 'sight size' of the work (in the case of framed works) or, preferably, the entire support that constitutes the artistic artefact (work without frame: canvas, panel, sheet, etc.).
Sculptures: measure the weight and, if the shape of the object makes it possible in an unequivocal manner, indicate the height (or length), width and depth. Take measurements at the highest and widest points of the object. For objects of irregular shapes, clearly indicate the point of the object from which the measurements are taken (height 73 cm, width 36 cm from the chin of the baby in the lap of the main figure).
Circular or curvilinear objects: measure the diameter or perimeter.

Furniture: indicate the measurements in the following order: height, width and depth.
Tapestries and carpets: measure the length and width or, in the case of circular or curved objects, the diameter/perimeter.
Precious metals: measure the dimensions and weight.
Books and archival documents: measure the pages (or indicate the format: A4; B5; in folio; etc.) and the plates inserted, taking care to open them completely.

CATEGORY 4: INSCRIPTIONS AND MARKINGS
The serial numbers, security devices, inventory numbers and markings, the presence of cancellations, signatures, titles, dedications, annotations of ownership or change of ownership, commentaries, etc. must be indicated and transcribed in this category, taking care to note their relative positions (front of the flyleaf; back of the plate, bottom right-hand corner, etc.),
Since these are characteristics that allow for unequivocal identification of the artefact, even in the case of multiple works (prints) or serial works (printed books), this field must be filled in with the utmost care and precision.
The text should be transcribed in full, taking care not to make corrections, but:
– In place of a complete transcript, if the inscription is particularly long, it is possible to indicate the beginning and the end of the same. The missing part can be replaced by photos of the details;
– If the commentaries are numerous and large, and if they are the only inscriptions that identify the printed book, it is possible to specify which pages they are on, transcribing the most significant ones, which, if removed, would reduce the value of the object or make the intervention evident.
If it is not possible to provide an unambiguous interpretation of the text, reference may be made to photos of the details, preferably providing a description in the following ways:
– The interpretation deemed to be most likely may be transcribed, taking care to point out that it is a hypothesis;
– Illegible words must be indicated in the complete transcript, possibly using square brackets around the number of words that cannot be interpreted;
– Corrections (deletions or replacement of words or phrases) must be described (with a strike-through; blackening out of the previous text, etc.). The previous text may be fully or partly readable, or not readable. In the case of transcriptions, reference is made to the criteria adopted for inscriptions with no corrections.
Symbols or drawings that complete or replace the text of the inscriptions must also be described. Here too, it is advisable to use photos of details to ensure effective illustration of particular features.
For each feature, it is necessary to indicate the materials and techniques used (numbering by means of embossing, manual incision or scratching; dedications and signatures made with felt-tip pens; metal inventory label no. 1234 of MiBAC; etc.).

CATEGORY 5: DISTINGUISHING FEATURES
While the previous category refers to those features that, intentionally added to the object by the maker, owner or holder, are indirectly (in the case of markings, cancellations, dedications, signatures, etc.) or directly (in the case of serial or inventory numbers, notes on ownership or change of ownership, etc.) important for identifying the object, this category is to be used to describe any anomalies in the object caused by its use or by storage, display, transport, etc. Since these have occurred naturally and unintentionally, they are unique features also in multiple works or those made by the same artist adopting manual or mechanical serial production techniques. For the anomaly to be absolutely effective in characterising the object and capable of allowing absolute technical and scientific confidence in identifying it, it must satisfy the following requirements:
– *Absolute rarity.* The hypothesis that the feature (in terms of its nature, size, location) may have been produced by chance to objects being compared with it (stolen object and well-identified object) must be technically impossible or extremely unlikely (excluding the hypothesis of heterogenesis).
– *Relatively inconspicuous.* The criterion is based on the fact that persons seeking to conceal, remove or alter anomalies that might allow the stolen item to be identified must be able to detect and appreciate these features, understand the importance for the purposes of identification and intervene appropriately.
Generally speaking, the effectiveness of the anomaly in term of identification is:
– inversely proportional to its conspicuousness;
– directly proportional to the difficulty of access to and/or observation of the place where it appears;
– linked to the group and level of those who know it in detail. If the information is public, there is a greater likelihood that targeted or complete restoration of the object will remove the anomaly, at least in the conditions as known and recorded;
– *difficult to reproduce.* This aspect means that a possibility that is the opposite of the previous one should be considered: the wish to have a reproduction recognised as an authentic work. Notwithstanding the considerations mentioned in the preceding section (conspicuousness, accessibility, knowledge), even if it is difficult to reproduce, an anomaly is indeed a element of security in itself, making it possible to differentiate the real work from a forgery;
– *difficult to remove* without leaving a trace of the work to alter the known condition of the artefact or restoration of its initial state.

Examples:
Paintings: cracks, repairs, irregular edges, holes, distinctive brushstrokes, stains.
Prints, drawings, documents: tears, holes, stains, rims, watermarks, repairs, abrasions, creases, restorations, cropping
Wood: veins, impressions left by a particular type of saw, special finishes, surface coatings, irregularities in inlays, holes made by woodworm.
Metal: casting defects, scratches, dents, abrasions, irregular welding.
Textiles: tears, stains (of colour, through wear), holes, repairs, irregular weaving.
Glass: cracks, bubbles, scratches, surface with irregular texture or colour, repairs, chipping.

CATEGORY 6: TITLE
Some works of art are known by their title: chosen by the author, indicating the type of object and provenance (*Processional Cross from Trequanda*; *Venus of Morgantina*, etc.), indicating the subject (*Lady with an Ermine*), imposed by popular or erudite tradition, the title and its various readings and variants (semantic and linguistic, starting from the name in the language in which the Object ID is filled in) must be indicated here. It should be borne in mind that:
– If the title coincides with the subject, this needs to be repeated in category 7;
– If the title appears on the work and has already been included in category 4 as one of the 'inscriptions and markings', it must be repeated here.
For printed books, the title, which is sometimes followed by one or more subtitles and other indications (privileges, dedications, etc.), is always explicit and constitutes part of the text. For these objects, therefore, the uniqueness of the title and the ease of locating it mean that all the available data must be transcribed. In the case of manuscript books, which may be miscellanies (this is also possible for printed books but the data does not appear to be significant), it is necessary to transcribe the title if it appears on the binding and also that of each work it contains (*De Bellis Civilibus – Historia Romana* by Appianus Alexandrinus includes the *De bellis civilibus*, the *Liber Illyricus*, the *Liber Celticus*, the *Epistola di P. Candido in libros Appiani*, the *Proemium Appiani*, the *Liber Lybicus*, the *Liber Syrius*, the *Liber Parthicus* and the *Liber Mithridaticus*).
For archival documents (handwritten or printed), however, if the title is not indicated (in the 'object' field), it may be that of the subject matter.

CATEGORY 7: SUBJECT
This field is to be used to describe what the cultural object represents. In particular, the category is not considered relevant for books and archival documents unless they contain illustrative plates or drawings (e.g. 'Large full-page woodcut at the beginning of the poem representing Dante in the dark forest being saved by Virgil, opening words of the first canto within a border and a vignette depicting Octavian venerating the Virgin on the recommendation of the Sibyl').
Even though this is a generic category, its importance is clear to see when one considers that one of the main search criteria used for the databases of stolen goods is that of the subject of the work. For a search for the artefact to be effective, it is essential that the subject indicated is correct and that it consists of terms that ensure that the search, through a reduction of the subset of items included with such features, does not lead to a false negative result. While it is true that a specific or technical description will contain more information, allowing for a targeted and thus more rapid search, it is also true that if the area of the search is reduced too much, the database will not find the item even though it contains it. This problem, which was difficult to solve when the databases were printed and only contained descriptive information and text, can now be overcome by today's digitised images and by the possibilities offered by new applications.
Without considering the potential offered by automatic searches for images, the availability of the latter allows the operator to check the correct identification of the subject and to carry out increasingly refined searches. Also for these reasons, the 'subject' category may now be filled in in a summary form.
Example 1: *Virgin and Child;*
Example 2: *Still life;*
Example 3: *Field of flowers.*

CATEGORY 8: DATE OR PERIOD
If the exact date of the work is unknown (1814; 3rd French republican year; etc.) the period in which the work was made can be indicated using:
– the years (1313-1347);
– the dynastic period (reign of Louis XI) or war (First World War);
– subdivisions of a century (early 1800s; second half of the 16th century; first quarter of the 18th century);
– the cultural period.
The period can be restricted by also indicating the supposed date (second half of the 16th century, probably 1577).

When the Object ID is prepared for international circulation of the information, it is preferable not to use local periods.
If the object has been altered at a later date, the various periods of construction should be indicated (altar from the early 13th century, base from the late 16th century).
In the case of books, it is important to indicate the date of publication. In those rare cases where this is uncertain, additional information about the publisher, the printer and the edition number (which are always present and which must be indicated in the following category 9), might help identify the publication of the volume and date it indirectly.

CATEGORY 9: MAKER
The maker of a cultural object may be: an individual artist, a number of artists, a school, a studio, a factory, etc. The name should be indicated only if it is certain; otherwise it is best to point out that it is an attribution (attributed to Giovanni Crivelli). If it is impossible to identify the maker, the lack of a name can be partially compensated for by indicating the area or context of its making (follower of Carlo Maratta, circle of Francesco Solimena).
For books, the names of the author, the publisher and the printer must be indicated; for an archival document, the organisation it is from (in the header of the paper) and who wrote it.

ADDITIONAL INFORMATION
The Object ID is a minimum standard that needs to be completed with all the information that may be considered useful for better and more effective identification of the object. The additional information recommended by the J. Paul Getty Foundation, by UNESCO and ICOM (depending on the specific features of each item, the following list should be considered as purely indicative) may be included in the last field of the Object ID entry together with a brief written description of the object (for books, it would be useful to transcribe the identifying information along the lines of bibliographic citations: name and surname of the author; the title in italics; the place of publication; the publisher; the year of publication).
– The history of the provenance of the object, indicating changes of ownership (indicating the date and place);
– The existence of certificates of authenticity/provenance;
– The inventory/catalogue number. If it is physically present on the object, the number must also be noted in the 'Inscriptions and Markings' category.
– References to publications that examine the item referred to in the Object ID;
– A history of exhibitions (dates, places, name of the event, exhibition catalogues if published);
– The place of origin/discovery: the place where the artefact was made or discovered;
– Cross-references to other objects: this may include, for example, links to similar objects in other collections;
– The date of compilation of the Object ID and the name of the compiler;
– The current state of the object (its physical condition);
– The permanent location of the object;
– The name of the institution that houses the object;
– The precise location within the institution that houses the object;
– The date of acquisition;
– The inventory date;
– The date when the inventory was last updated;
– The history of loans, specifying:
  – The places/institutions/persons to which/whom it was loaned;
  – The date of approval/authorisation of the loan;
  – The date on which the loan started;
  – The duration of the loan;
  – The date the object was returned.

How to use the Object ID

Compiling the Object ID is extremely simple. It can be done:
– online at www.carabinieri.it: this requires a digital camera that, through an interface with a computer or with an external memory to be inserted into the hardware, makes it possible to upload the image; texts are typed directly (or copied and pasted from another text file) into the fields on the form;
– on a paper form: a blank form can be downloaded from the Carabinieri Corps website and printed for off-line and/or manual compilation.
– by means of the iTPC app for smartphones and tablets.
Once the form has been filled in, following the check-list for the nine descriptive categories and the free

description field (and having created the photo file, if applicable), the Object ID must be kept in print and digital form (also filled-in printed forms may be digitised), in a safe place, away from the actual object which it identifies and in a place that is easily and quickly accessible in case of need. It is advisable to create and keep a second copy of the form, which may be useful if the computer files or physical sheet should, for any reason, be damaged, lost or no longer available (one copy is kept by the museum and the other by the authority upon which the museum depends).

The entity that has the object in its possession must know the exact location of the item to which the Object ID refers and must be informed of all its movements so that it can update the form (previous forms must be eliminated if it is decided not to date them) and use it if the item is stolen.
The Object ID must immediately be provided to the CC TPC, if in Italy, or to the police or Customs, if abroad, so that a search can be launched both nationally and internationally.

How to take the photos [2]

Due to its simplicity and low cost, digital photography has for some time replaced traditional photography on film in everyday use. The ability to take a photograph and immediately see if it has come out successfully, coupled with the ease of taking good photos thanks to automatic settings and, lastly, the integration of mobile phones with cameras, means that those who have so far relied solely on descriptive inventorying have no excuses.
The Object ID card (on paper, filled in online at www.carabinieri.it or using the iTPC app) is currently designed (the introduction of IT modules will allow a number of photographs to be included) for the inclusion of a single image that, since it has to give a full understanding of the object, must necessarily show the object in its entirety, and therefore be a general view. The effectiveness of the images should in any case supplement the standard form with a photographic file showing the details described in the text (in particular, in Object ID categories 4 and 5), making it possible to identify the object without room for doubt (the image illustrates the details described in the text, making them universally understandable). [3]
The following are a few tips that, if followed, can help obtain images that may be of great use in tracking down and identifying the object if it is stolen:

- Each object must be photographed on its own, avoiding overlaps or superimpositions. Three-dimensional objects of medium size should be photographed from a partial angle of between 30 and 45 degrees, from a viewpoint that is slightly higher (about 10 degrees) than the top of the object. This is not applicable, however, in the case of archaeological finds that need to be viewed from the front or top. The photographs of complex objects or aggregates must include both general views, which are essential for showing the overall structure of the object and its decoration, and details of each individual element;
- To obtain perfect photos, which portray the object referred to in the Object ID, it is necessary to take all measures to remove the object from its normal setting, especially when background colours or when any interference from or connection or proximity to other items might in some way make the object itself harder to make out and interpret correctly. If possible, it is preferable to use paper rather than fabric as a background, in order to avoid the presence of folds and shadows; the background should in any case be opaque and the outside edges should not appear in the picture. The colour of the background, which should not be too bright, should be in contrast to the subject so as to enhance its outlines;
- Uniform illumination is preferable for most objects. Exceptions to this rule include objects that have surface decorations or finishes (vases with engravings, bas-reliefs, etc.) that can be picked out by lighting from the top or side, more or less oblique in relation to the surface concerned, together of course with diffused lighting. Sharper lighting may, however, be necessary in those cases where details need to be picked out and highlighted. Special attention needs to be paid to photographing metal or glass objects (candlesticks, ciboria, lavabos, etc., but also framed paintings with protective glass) that, more than others, may reflect what is in front of them or that may create reflections, making it more difficult to recognise and identify the object itself. The potential of digital photography for taking and instantly checking the image means that multiple shots can be taken in different ambient and artificial lighting conditions, from different angles and with different flash settings, so that the best one can be chosen for the Object ID. Alternatively, a number of photos can be chosen in order to make the object as a whole simpler to understand, together with the details that are considered to be the most significant and discriminating and, therefore, worthy of being used;
- Pictures taken with metric references can replace or add to the measurements indicated in the relative category. Technically speaking, if one were to imagine that the only source of such information were the photo, the metric scale or any object of known size suitably placed next to the object in question makes it possible to determine the size ratios of the object in the picture. In the field of cataloguing, these scale references are considered essential for historical and artistic objects that are smaller than 10 cm per side or diameter and when photographing archaeological artefacts, regardless of size. Metric scales (designed as such and properly used, or common objects – such as a coin – placed in the picture for this purpose) must be understandable without interfering with the object, and they must be proportionate in size;
- Photographs of very small objects and of details (coins, cameos, semi-precious stones, punches, microliths, etc.) require special technical care: micro lenses are required for reflex cameras and the macro setting is needed for compact digital cameras. USB digital microscopes, which can now be bought at a relatively low cost, can be used to solve many of the problems encountered in ensuring image quality for small objects or details of particular interest on larger objects (video recordings can also be used to take frames in sequence, although it is difficult to obtain satisfactory results with this method if focusing needs to be done manually. In most cases, these instruments can be used in contact with the object or from an angle, as well as with mini-tripods with a fixed or articulated arm. They use LED ring lights (which can be disabled), and a focusing system that can be adjusted even before shooting, making it possible to check the photo directly on the screen of the computer to which they are connected. The management software of the USB device also makes it possible to change some important parameters, such as the white balance and colour saturation.

ORGANISATIONAL MEASURES AND PASSIVE AND ACTIVE PROTECTION

Organisational measures to reduce risk, including activities and procedures that, when made standard practice, ensure a level of operation, can prevent criminal actions. These are across-the-board measures that are irrespective of the use of a single setting (archive, exhibition gallery, storage facility, etc.) and aim for overall management of the site. They include:

a) The management of keys, which must include:
- the identification and classification of all the locks and padlocks on all points of access;
- a register with a list of keys, indicating their type, the number of duplicates available, and the location of each duplicate;
- registration of temporary consignments of keys and subsequent returns;
- rapid replacement of the lock in the case of loss;
- substitution of mnemonic keys at irregular intervals, and in any case of no longer than six months;
- adequate instructions to the members of staff entrusted with security keys on how to keep them both on and off the premises of the facility.

As regards the type of keys, it is recommended to use those with controlled duplication or of a mnemonic type (such as combination locks), which offer greater guarantees;

b) Access control. This must provide for registration of the movements of authorised personnel (maintenance and cleaning staff, office staff, scholars, etc.) recording their arrival and departure, or through the use of other automatic control systems, and their identification by means of ID badges;

c) Drafting of protocols for access to *the control room, for opening and closing the galleries, and for security patrols*;

d) Visitor management and control, to which one of the factors of risk is linked, since the greater the number of visitors, the greater the potential risk of criminal actions. Visitor management may also involve checking each individual at the entrance, either by authorised personnel or by instruments (metal detectors), so that no weapons or instruments that could be used to cause damage are introduced into the facility. These systems are recommended for situations involving particular socio-political conditions or for large crowds. In some cases, it may be necessary to require bags to be left in a cloakroom at the entrance;

e) The use of uniforms by security staff can help discourage some types of actions against the cultural heritage;

f) The training of security staff is fundamental for implementing procedures for normal conditions and for emergencies. Training must also aim to prepare staff so that they can recognise any situations that might facilitate criminal activities, noticing any premonitory signs and putting countermeasures in place;

g) The facility maintenance plan must ensure that all service installations are effectively available in the case of an emergency. For this reason, all

installations must be designed in accordance with applicable technical regulations, and correctly constructed, tested and serviced. It is recommended that maintenance should be entrusted to the specialised company, preferably with certification of quality, and the maintenance contract should establish the maximum times for extraordinary maintenance and repairs, the ways that maintenance operations are carried out, and a calendar of scheduled maintenance for the year. Lastly, correct management of the system must include a register with notes on all operations carried out (maintenance, interventions for faults, indications of false alarms, etc.);

h) the cataloguing and inventory of works on site and periodical checks of the number of objects are activities that, while not sufficient to prevent the theft of an item, nevertheless make it possible to detect it quickly and to implement actions to recover it with greater chances of success.

Passive protection systems

The first obstacle faced by criminals is that of the physical defences of the building or perimeter walls and, in general, closed points of access.
These defences cannot however be considered sufficient to ensure an acceptable level of security: it is necessary to intervene mainly by adopting *forms of passive protection* that improve and reinforce the existing physical defences. These include:

– *Fences and gates*, which are indispensable, especially when the building or complex is partly or entirely surrounded by a park or garden;
– *Turnstiles and bars*;
– *Entrance doors*;
– *Protection of windows using gratings*;
– *Protection of light wells and skylights*;
– *Doors leading into the individual rooms*;
– *Safety locks*;
– *Protection of individual works (display cases, safes, glass, etc.)*.

As pointed out in the analysis of vulnerable points, points of access constitute the most critical factors in the facility and thus need to be adequately protected. As a result, the physical security of doors, windows and all other openings giving onto the outside are an absolute priority and must be given the greatest attention.
The measures listed below are adequate passive security solutions that, based in part on the investigative experience of the CC TPC Headquarters, have emerged as effective countermeasures against criminal actions, having discouraged or at least delayed break-ins. It should be stressed that maximum efficiency of the security system is obtained by using independent but complementary measures.

Doors and locks

– Preferably armoured, these must be made of solid materials, with a safety lock that enters the frame anchored to the walls with brackets firmly cemented into the wall;
– In the case of those made of wood, it is recommended that they be solid and at least 40 mm thick, anchored to a solid frame, with very sturdy hinges; any parts in glass must be of the laminated security type;
– If fastened to the outside of the walls, they must have additional safeguards in the form of strap hinges;
– Should it not be possible to replace them rapidly, older doors need to be fitted with systems to prevent them from being lifted off their hinges;
– Irrespective of the type, it is recommended that external doors be fitted with horizontal deadbolt locks (either simple or by turning a knob, with at least three bars); the use of an extra lock, with an equally solid plate on the frame, provides extra effectiveness;
– French windows giving onto balconies, terraces and gardens (with laminated glass panes) should be fitted with cylinder locks with no knobs (with safety plates fitted with mushroom-shaped slots). With a minimum of six per leaf, the number of slots needs to be calculated based on the size of the French window;
– Even if they have a good lock, solid doors are suitable only if they are fitted with safety plates firmly anchored to the panel, to prevent the inner cylinder from being broken once the decorative plate has been removed;
– The lock barrel, preferably of the European security type with controlled duplication, must not project, since it might be held and pulled away: on the contrary, it must be flush with the outside part of the door and screwed into place from the inside. If the barrel projects, it must be protected from breakage or wrenching by means of a rectangular guard or safety ring screwed into place from the inside (safety rings are totally ineffective if fastened from the outside);
– Wide-angle peepholes, with a field of view approaching 180° (in addition to video-entry phones and a video-surveillance system) in manned facilities must be used on external doors used by employees and/or the public: these devices help staff identify people who, outside of work and visiting hours, wish to enter the facility or enter into contact (legitimately or fraudulently in order to gain access) with the staff inside. An additional expedient is to fit security chains and locks with a door security guard that make it possible, once the situation has been checked through the peephole, to have a direct, even though limited, view of the outside.

Windows

The effectiveness of windows depends on two factors: the frame and the glass. As concerns the frames, the indications are the same as those already indicated for doors. For the glass, on the other hand, it is necessary to expand on what has already been said about doors with glass panes.
Since panes that are not shatterproof can be broken by a hard blow, it is advisable to fit *shatterproof glass*: [4] depending on the way it is made, if it is securely fixed to the frame of the windows or French windows, laminated security glass prevents or slows down access by burglars, or at least makes a noise that can be heard.
The Italian UNI [5] standards that establish the specifications for glass panes to be included in the crime- and vandalism-prevention category [6] are EN356 and EN13541: the former applies to laminated glass designed to protect against impact; [7] whereas the latter applies to resistance to pressure caused by explosions. The test methods used to provide a comparative classification of resistance of the various types of glazing classify laminated glass as follows:
– normal safety;
– vandalism-resistant;
– burglary-resistant;
– bullet-resistant.

The categories to which anti-burglary/crime-prevention glass must belong in order to be suitable for the direct protection of works of art (showcases, protection panels, etc.) or for the container (access to the museum), range from P6B to P8B. The importance of the museum installation and the value of the works it contains are the basis for deciding which type of glass to use for external entrances and for the protection of the objects on display. The glass needs to resist a minimum number of strikes without creating an opening greater than 400 x 400 mm. Depending on its resistance to these tests, the glass is classified in accordance with the table below.

Classification of impact-resistant laminated glass

Resistance category	Total number of strikes by hammer and axe	Minimum number of hammer strikes
P6B	Minimum 30 to 50	12
P7B	Minimum 51 to 70	12
P8B	Over 70	12

Crime-prevention glazing, as well as being the potential target of direct attack by blunt or bladed implements, may be subject to the effect of explosions made by the criminals in order to enter the museum and steal cultural objects.
In order to minimise the risk of damage to works caused by glass fragments, by parts of the bomb or by any other debris carried by the explosion, the anti-burglary/crime-prevention glazing used to protect cultural objects must also respond effectively to the effects of explosions.
The resistance of laminated glass to explosions depends on a number of factors:
– The power of the explosion;
– The distance between the explosion and the objective;
– The position of the work inside the building;

– The height of the explosion in relation to the object to be protected.

Furthermore, the protection offered by explosion-resistant laminated glass does not depend solely on its composition but also on the fixture and on the way the glass is fastened to it.

The test method adopted by the EN 13541 standard uses *shock* waves generated by a shock tube or by a device capable of simulating the effects of a highly explosive detonation. Here too, the choice of laminated glass to be used for protection depends on the importance of the museum and on the value of the works it contains.

Classification of laminated glass resistant to the pressure of explosions

Class	Maximum positive overpressure of the reflected blast wave	Specific impulse
ER1	50 =< Pr < 100	370 =< i+ < 900
ER2	100 =< Pr < 150	900 =< i+ < 1500
ER3	150 =< Pr < 200	1500 =< i+ < 2200
ER4	200 =< Pr < 250	2200 =< i+ < 3200

Further solutions for windows include:
– Equipping the windows and French windows with locks (the handles can be held by locks or by chains with padlocks);
– Replacing plastic roller blinds with steel blinds, having them slide along securely anchored tracks and equipping them with a locking device to prevent them from being raised.

Gratings

To provide extra protection, and in those cases where laminated glazing is not used, the following constitute – or help to create – a valid obstacle/deterrent.
Where the need for protection allows, effective passive protection can be obtained by installing gratings on windows that are accessible (on the ground floor or that can easily be reached), and on those that give onto poorly illuminated areas and that are thus subject to less direct monitoring.
Gratings can be considered as complementary measures when used with security glazing, but they are fundamental when this sort of glass cannot be used.
Considering that light wells are a preferred means of entry for burglars, the grating needs to be robust and fastened at the greatest possible depth from the outside opening.
To ensure adequate protection, the gratings must be made of solid iron, with bars at least 15-16 mm thick arranged to form a tight mesh, to make it more difficult to push them apart using mechanical tools, as well as limiting the risk of objects being put through them when the windows are open. It is important that the transversal bracing and the drives of any screws be welded and that the frame be fastened with anti-burglary steel pressure screws from which the head can be broken off after application.

Display cabinets and showcases

For works on display in showcases, the characteristics of the glass may prove to be the last passive security measure against criminals who have managed to get past all the protection devices arranged concentrically around the object. All the previous indications concerning the requirements for glazing are also applicable here. It needs to be assessed on the basis of the type of object being protected and the degree of harm that the theft or damage to the object would cause to the cultural heritage.

Safes and vaults

Safes and vaults used to protect works of particular importance need to meet the requirements indicated in UNI EN 1143-1, the European standard which classifies protection systems in 14 levels of resistance, rising from Grade 0 to Grade XIII. These are attributed by subjecting the safes to tests that measure resistance to partial access and full access, and that measure the characteristics of the locks. The corresponding values of the various categories are shown in the table below.

Degree of resistance	Test of attack with forcing tools		Locks	
	Resistance value for:			
	Partial access RU (4)	Full access RU (4)	Quantity	Quantity and class in compliance with UNI - ENV 1300:2014
0	30	30	1	A
I	30	50	1	A
II	50	80	1	S
III	80	120	1	B
IV	120	180	2	B
V	180	270	2	B
VI	270	400	2	C
VII	400	600	2	C
VIII	550	825	2	C
IX	700	1050	2	C
X	900	1350	2	C
XI		2000	3 (2)*	C (D) *
XII		3000	3 (2)*	C (D)*
XIII		4500	2	(D)

* Alternative values in brackets

Other crime-prevention measures: lighting

Adequate lighting is itself a crime-prevention measure, since it discourages criminal actions and, in the event of such actions, makes it possible to detect them quickly. In particular, lighting must be used in external areas that are less subject to direct monitoring or that are less often used. On the market, it is now possible to find systems that are turned on by photocells or sensors that reveal the presence or transit of people, allowing targeted use while also reducing energy consumption and expense.

Active protection systems

Active protection systems consist of intrusion-detection, anti-theft, anti-assault and burglary-protection systems, coupled with surveillance: in other words, the integration of people and technology.
The active protection system must be able to detect criminal action the moment it starts. It consists of a series of detectors, a connection system, a manned control centre, alarms, and operators who are able to intervene rapidly.
The system needs to be imagined as in concentric circles around the site to be protected. This may include protection of:
– The *external area*, using sensors to detect climbing of the perimeter, break-ins, and the presence of intruders in the area between the perimeter and the building;
– The *building*, by detection of breakages in walls/windows and the presence of intruders in the access areas;
– The *individual premises*, by detecting break-ins through the walls/glazing and the presence of intruders in the internal areas.

Technology offers a wide range of products, including Wi-Fi systems, making it possible to find the most suitable solutions for various needs and situations.
The choice of components and their features, as well as the architecture of the system, need to be worked out during the design stage, and must comply with the technical standards for the sector (CEI 79-2 regulations – special standards for anti-burglary, anti-intrusion, anti-theft and anti-aggression systems; CEI 79-3 regulations – alarm systems – special requirements for anti-intrusion alarm systems).
In particular, the levels of performance of the components are decisive when protecting against sabotage, and their reaction to environmental conditions can reduce the risk of false alarms to a minimum. The choice of architecture for the system and its components must ensure a low probability of faults and provide prompt indication of any fault there may be, making it possible to intervene on site in the shortest time possible.
The level of automation, which is closely connected to the logistical and human resources present, is a matter to be examined separately. It is this that establishes the degree of interaction between people and technology.
In order to manage a high degree of automation, it is necessary to have excellent project engineering and expert installation, as well as constant maintenance as set out in the project. In order to ensure effective interaction between people and technology, the greatest care must be taken in the selection and training of the operators.
The protection system consists of:
– A set of detectors;

– Essential equipment (central control, command systems, local interconnections) and optional equipment (video systems, event recorders);
– Alarms.

Without going into details about the performance of the individual components, which are the outcome of constantly evolving technologies, the basic characteristics are as indicated below.

There are two main categories of detectors, depending on the *setting* where they are used:
– Indoor detectors, which are suitable for use in temperatures ranging from 5°C to 45°C (without requiring special protection against dust and humidity);
– Outdoor detectors, for use in temperatures ranging from -20°C to 60°C, as well as in the presence of rain, snow, fog, wind and dust.

In terms of their *mode of operation*, detectors can be divided into two categories:
– Passive, which analyse forms of energy in the environment or on the protected structures, to check if there are any dangers. These do not require a particular source of energy;
– Active, which induce energy in different forms within the environment or on the protected structures, and analyse any disruption to detect any danger.

With regard to the *geometrical characteristics of the places/surfaces to be protected*, detectors can be divided into four categories.

The main types of *passive detectors indoor use* are:
– Localised: electromechanical contacts; taut wire detectors, weight detectors;
– Linear: long-range passive infrared detectors;
– Superficial: wires or serigraphs, inertial sensors, selective microphones, pressure mats;
– Volumetric: passive infrared detectors; acoustic microphone; glass being broken, video motion detector.

The main types of *active detectors for indoor use* are:
– Localised: magnetic contacts;
– Linear: active infrared barrier;
– Volumetric: bistatic microwave barrier, microwave Doppler, ultrasound Doppler.

The main *passive detectors for outdoor use* are:
– Localised: electromechanical contacts;
– Linear: long-range passive infrared detectors, taut wires;
– Superficial: differential pressure detectors on the ground, inertial detectors, microphone cable;
– Volumetric: video motion detector.

The main *active detectors for outdoor use* are:
– Localised: magnetic contacts;
– Linear: active infrared barriers;
– Superficial: optic-fibre detectors;
– Volumetric: microwave barrier, monostatic microwave detectors, radiating cable, electric field.

The *alarm centre* is the part of the system that manages information about the state of danger, as produced by the sensors. It must be able to gather the information produced by the sensors, correlate them with the state of operations at the time, activate local means of dissuasion and communicate the state of danger to the remote alarm reception centre.

Alarm centres may have a variety of functions that, even though they are not essential for the basic process mentioned above, nevertheless ensure higher or lower levels of quality in terms of organisation of the system, documentation of detector tests, programming, power supplies to the sensors, battery tests, self-checks, diagnostics, and event logging.

The anti-intrusion security system must have a secondary or back-up power supply in order to ensure operation even when mains electricity is cut off.

Even if considered to be optional, *CCTV systems* play a very significant role, since they monitor areas both in normal conditions and when an alarm is raised.

The European EN 50132-7, 1996-06 standard defines a CCTV installation as a system that consists of:
– *Recording equipment* (video cameras);
– *Image display* (monitors);
– *Management systems* (video matrices for connecting the cameras to the monitors and recording and communication systems);
– *Video recording system;*
– *Data transmission system*.

In order to assist in the investigation of criminal acts, it is important that the images taken by the video cameras be recorded and kept for the longest time permitted by law.

It is important to reaffirm the importance of planning the active protection system: this is the essential period when, in response to a detailed analysis of the situation and to the needs highlighted by the client, the technical decisions are made. These must comply with the technical rules of the sector, in order to find solutions that are suitable in terms of both quality and quantity.

THE CORRELATION BETWEEN SECURITY OF CULTURAL ARTEFACTS AND SAFETY OF STAFF AND VISITORS

Museums are comparable to any other workplaces that provide public services. In terms of the security issues involving both staff and visitors to museums, the question of security is in some ways unique, due to the mission of such facilities, which is to preserve and protect cultural artefacts. Together with the concept of 'safety', the term 'security', which refers to 'the state of being free from danger or threat', and 'the safety of a state or organization against criminal activity such as terrorism, theft or espionage', [8] refers to the set of procedures and systems that can safeguard museum staff and visitors, and anyone else present in the museum for various reasons, from all risks, danger and harm. [9]

As mentioned a number of times in this publication, the objective of safety and security systems in museums can be attained only by adopting a comprehensive and integrated approach to the problem, through the precise and timely assessment of possible risks in the museum. This must include its environment, the characteristics of the facility and its cultural assets, and its functions. Achieving this objective requires the active participation and heightened accountability of all staff members, continuous information, training, and refresher courses assessed by means of special exercises.

Personal safety: museum staff and visitors

Under Italian Legislative Decree 81/2008 the employer [10] is obliged to assess all the risks that may be present in the workplace, and this must be followed by the drafting of a special document [11] and the appointment of a manager for the Risk Prevention and Protection Service (*RSPP*). Other requirements are established directly or through the delegation of functions. [12] In the risk assessment and in the subsequent choice of measures to protect workers' safety, priority is to be given to general safety systems rather than to personal ones.

Some private companies that work in the sector of museum services management have adopted the OHSAS 18001 standard. Certification guarantees risk assessment and management in the workplace [13] and ensures systematic control, knowledge and awareness of all the possible risks inherent in normal and extraordinary conditions.

In Italy, the various risks analysed during assessment of fire hazards, and the actions designed to ensure the safety of persons and property, are covered by special regulations for the sector as regards buildings used as museum facilities [14] or as archives and libraries. [15] The legislation provides for the obligation to design and construct safety systems, which must be approved by the fire department and, in the case of particularly complex structures, special certification. These preventive measures must always be followed up by operation and emergency management drills and periodic checks of the fire-fighting systems. The rules laid down by Ministerial Decree 569/92 are in part complementary to the provisions of Legislative Decree 81/08, with no contradictions between these standards, even though they do provide for different approaches to implementation.

In the specific case of crime-prevention security, the risks faced by workers include the possibility that the criminal event is carried out using violence against staff, the possibility of physical injury caused by tampering with the safety systems of the facility (arson, alteration of electrical systems or air-conditioning systems, broken glass, etc.) or as a result of brutal terrorist attacks. To these risks should also be added the psychological risks caused by the responsibilities of individual workers and the possible consequences, including criminal charges, for any failure to observe the duties called for by their job descriptions, or by the regulations or the security and emergency plan. These risks may be equally present for visitors, though to a lesser extent. In case of theft carried out in a sensational manner during opening hours, members of the public may also be involved directly or indirectly during the criminal operation, as witnesses to the event. As such, they may be able to help in raising the alarm to staff or in later providing useful information to the police during their investigations. Recent cases in the news have unfortunately seen the involvement of museum visitors as hostages in terrorist attacks. [16] It should be borne in mind that, in the case of crimes committed during opening hours, the criminals are to all intents and purposes visitors when they enter the museum, even though they aim to commit a crime rather than simply view the cultural artfacts. By visiting

the exhibitions and observing them carefully, they can find out about the layout of the rooms, the security systems and the location of crime-prevention devices, fastening systems and especially any vulnerabilities there may be. In view of this, the custodial staff, as well as the security staff in charge of the surveillance cameras, need to be trained to detect anomalous behaviour in members of the public, reporting this to their colleagues. The presence of a code of conduct for visitors makes it possible to increase the safety of the public and the security of the cultural assets. To achieve this, each museum should approve and make public its code of conduct, firmly though politely ensuring that it be respected. In terms of security, this code must at least contain:

– The maximum number of persons who may enter, specifying further limits in rooms that may present particular risks for the collections but also for the visitors themselves in the event of an emergency;
– The prohibition on introducing weapons and ammunition; explosive, flammable or volatile substances; dangerous objects, and objects that are excessively heavy and bulky; works of art and antiques;
– The mandatory use of the cloakroom, if present, to leave their belongings, allowing access to the exhibition galleries only after the following have been left in the lockers and umbrella stands: a) sticks, umbrellas and pointed, sharp or heavy objects. Walking sticks are nevertheless permitted for the elderly or infirm; b) suitcases, bags, backpacks, helmets and anything that might put the safety of the exhibits or the facility at risk;
– Prohibitions: touching the works, unless otherwise indicated by the museum; going beyond protection barriers; leaning against showcases, plinths and other display elements; writing on or defacing walls; running through the exhibition areas;
– The obligation to comply with instructions given by staff (to open bags, hand over packages, etc.);
– A warning that staff may ask visitors to leave if they fail to abide by the code of conduct and, if necessary, to start judicial proceedings against them;
– Safety and security rules for group visits;
– An indication that, for safety or management reasons, the museum may restrict access in order to ensure the safety and security of persons and museum property;
– A warning that urgent measures may be taken in the event of criminal actions, possibly with closure of the entrances and controls at the exits;
– The prohibition of any actions that might endanger the safety of persons and property;
– The obligation to immediately report any incident or abnormal event to security staff;
– Measures to be adopted in case of emergency;
– The obligation to comply with instructions given by staff.

The security of the collections

Safety from risks and environmental accidents also ensures the safety of people and of museum property, although in all emergency situations it is first of all necessary to attend to the safety of people. Immediately after (if this is not possible at the same time) come the collections and facilities, for which damage-limitation actions must be taken. Crime-prevention security is however another matter. The need for rapid evacuation of people and property in the event of an emergency conflicts with the need for cultural assets to be immovable and protected from theft and damage caused by individuals. Laws concerning the security of museums against theft have been issued on a number of occasions: in the form of special funds for alarm systems or, in the case of state-run museums, in the management of surveillance and monitoring of cultural assets as part of the regulations regarding opening times.

Security services to be carried out in advance

Context	Service	State of security	Type of spaces to monitor	Places and objects to monitor	Responsability for security services
Open to the public and staff	Normal activity of the museum (conservation assets and promotion)	- Security of the assets - Safety of the public - Safety of the museum staff	Rooms and exhibition areas Service areas of the museum Offices Laboratories Storage facilities	Entrance Emergency exits Assets	Reception staff Staff
Open to the public	Activities also in overtime hours (at night, holidays…)	- Security of the assets - Safety of the public - Safety of the reception staff	Rooms and exhibition areas Spaces for museum services	Access Emergency exits Assets	Reception staff External staff (external volunteer organisation)
Closed to the public and staff	Evening closure Closure for day of rest (if applicable)	- Security of the assets	External perimeter	General alarm system Guarantee of security for all entrances	Staff External surveillance company
Closed to the public and open to the staff	Weekly closure for the public and staff activities (research, study, conservation of the collections, facility organisation, maintenance activities)	- Security of the assets - Safety of the staff	Offices Laboratories storage facilities	Alarm systems for the exhibition galleries Guaranteed security of entrances to museum galleries	Staff

[1] Ref.: *Legal and Practical Measures Against Illicit Trafficking in Cultural Property*, UNESCO HANDBOOK – International Standards Section Division of Cultural Heritage, 2006.
[2] For further information: Galasso R. and Giffi E. (eds), *La documentazione fotografica delle schede di catalogo: Metodologie e tecniche di ripresa*, Istituto Centrale per il Catalogo e la Documentazione (ICCD).
[3] General images of the object may be used here to indicate the locations of the object that has these characteristics (with boxes, arrows or numerical/written references to the macro photographs). Drawings and sketches may also be used as a rapid means for the same purpose.
[4] Laminated panes are made by coupling two or more sheets of glass with one or more plastic films between them (transparent, opaque or coloured, as required).
[5] According to European Directive 98/34/EC of 22 June 1998, a 'standard' is a technical specification approved by a recognised standardisation body for repeated or continuous application. One effective instrument is that of the technical standards issued by the Ente Nazionale Italiano di Unificazione (UNI), a private non-profit association with over 7000 members, including businesses, professionals, associations, scientific institutes and schools, and public administration offices. It works in all industrial, commercial and services sectors, with the exception of electrical and electro-technical areas (which are covered by CEI – the Comitato Elettrotecnico Italiano). The role of UNI as a standardisation body was recognised by European Directive 83/189/EEC of March 1983, which was implemented by the Italian Government with Law no. 317 of 21 June 1986. UNI regulations are not mandatory but they do constitute the standards for raising the level of security for museums and the works they contain.
[6] It should also be borne in mind that laminated glazing constitutes a double level of passive security and safety since, when broken, the fragments remain attached to the plastic film: pieces of glass that might be dangerous for people or for the objects being protected cannot come away from the pane. When the panel that holds the glazing is correctly positioned, this characteristic makes this type of glass the best form of safety protection, also in terms of accident prevention.
[7] The first test simulates the opening of a hole big enough to allow a hand, a forearm or a tool to pass through. It assesses how the laminated glass reacts to the impact of a steel ball (with a diameter of 100 mm and weighing 4.11 kg) dropped from different heights. The test is passed if, after being dropped three times from directly above the centre of the test piece, the steel ball does not pass through the glass. The second test simulates the opening of a hole big enough to allow a person or special

equipment to pass through, and consists in assessing the behaviour of the glass when struck by an axe.

[8] 'Security' – from the entry in Oxford Dictionaries online, 2015.

[9] In Italian, the concept of both safety and security is summed up in the word 'sicurezza', whereas French, like English, uses two words, *sureté* and *sécurité*.

[10] Article 2, paragraph 1, letter b, 'employer' is defined as *the titular party of the employment relationship with the employee or, in any case, the party who, depending on the type and structure of the organisation in which the employee carries out his or her activities, is responsible for the organisation itself or for the production unit in so far as it exercises decision-making and spending powers. In the public administration, as per Article 1, paragraph 2, of Legislative Decree no. 165 of 30 March 2001, the 'employer' is the manager who has managerial powers, or the official without a managerial post, only in those cases in which the latter is in charge of an office that has its own managerial autonomy, nominated by the governing body of the individual administration, taking into account the location and functions of the offices in which the activity takes place, and with autonomous decision-making and spending powers. In cases in which no employer is identified, or in cases that do not satisfy the above criteria, the 'employer' is considered to be the governing body itself.*

[11] The document is well described in Article 28 'Subject of risk assessment'. The law specifies that it should be simple, brief and clearly understandable, and it must contain:

a) A report on the assessment of all risks concerning health and safety at work, specifying the criteria used for the assessment itself. The choice of the criteria on which the document is to be based is left to the employer, who shall implement them in a simple, brief and clearly understandable manner, so as to ensure the completeness and suitability of the document as a means for planning business and prevention operations;

b) An indication of the prevention and protection measures implemented and of the individual protection devices adopted, in accordance with the assessment referred to in Article 17, paragraph 1, letter a);

c) The programme of measures considered necessary to ensure the improvement of the level of safety over time;

d) The drafting of procedures for implementing the measures required and the tasks of the organisation that is to carry them out, to which only persons with suitable skills and powers must be assigned;

e) The name of the person in charge of the prevention and protection service, of the workers' representative for safety or that of the territorial authority and of the doctor who took part in the risk assessment process;

f) The specification of any tasks that may expose workers to particular risks and that require recognised professional skills, special experience, and adequate education and training.

[12] See Article 16 'Delegation of functions':

1. The delegation of tasks by the employer is permitted, unless expressly excluded, subject to the following limitations and conditions:

a) It appears on a written document, bearing a precise date;

b) The delegate possesses the necessary level of professionalism and experience required for the particular nature of the tasks being delegated;

c) It confers upon the delegate all the powers of organisation, management and control required for the particular nature of the tasks being delegated;

d) It confers upon the delegate the spending autonomy required for carrying out the functions delegated;

e) The delegation is accepted in writing by the delegate.

2. The delegation referred to in paragraph 1 must be made known promptly and adequately.

3. The delegation of functions does not preclude the obligation of the employer to supervise the work delegated to ensure that it is properly carried out by the delegate. The obligation referred to in the first paragraph is considered as completed in the event of the adoption and effective implementation of the verification and control model referred to in Article 30, paragraph 4.

(paragraph as amended by Article 12 of Legislative Decree no. 106 of 2009)

3-b. Subject to agreement with the employer, the delegate may, in turn, delegate specific functions concerning matters of health and safety at work under the same conditions as those referred to in paragraphs 1 and 2. The delegation of tasks referred to in the first paragraph does not preclude the obligation of the delegator to supervise the work to ensure that it is properly carried out. The person to whom the delegation has been entrusted in accordance with this paragraph may not, in turn, delegate to a third party the tasks delegated.

[13] OHSAS stands for Occupational Health and Safety Assessment Series and refers to an international standard for a system of management for the health and safety of workers. The OHSAS 18001:1999 standard was issued by the British Standards Institution in 1999, with subsequent revisions in 2007 and 2012. Specific guidelines were drawn up in 2000. OHSAS certification attests to the voluntary application by a company or institution of a system that allows for adequate control, which may also exceed compliance with mandatory standards.

[14] Min. Decr. no. 569 of 20 May 1992 '*Fire safety regulations for historic and artistic buildings used as museums, galleries and exhibition spaces*'.

[15] Pres. Decr. no. 418 of 30 June 1995, '*Fire safety regulations for buildings of historic and artistic interest used as libraries and archives*'.

[16] This is what happened in the attack claimed by ISIS on the morning of 18 March 2015 at the Bardo Museum in Tunis.

POSSIBLE SCENARIOS AND CODE OF CONDUCT FOR STAFF AND VISITORS

To be effective, the management of any emergency needs to be planned in advance. It is recommended that persons be chosen (from the surveillance/custody staff and from those who work in the facility) to act during their shift as contact persons/coordinators for the rest of the staff in the event of an emergency. This is to avoid improvisation – which is always prone to negative effects (chaos, uncertainty, panic, etc.) – in managing the visitors and relations with criminals.

Theft

The theft may be discovered when the object has already been stolen or when actions leading up to its theft are already under way.

In the first case, if an object is missing from the place where it is normally exhibited or stored, theft is one of the various possibilities to be taken into consideration. Care must be taken not to attribute the absence simply to its being in the wrong place, to a loan or to its having been taken elsewhere for restoration or some other reason. These are of course possible hypotheses, but they must arise through exclusion of the first hypothesis, which is always that of theft. Any other approach would lead to a delay in raising the alarm, whereas, on the contrary, it is essential to raise it immediately, as soon as the absence of an object is noticed. In any case, any authorised removal must be indicated by special cards in the normal place of display/storage. These cards should preferably be drafted using a graphic design known by the surveillance and custody staff, so that any counterfeiting or fakes used by criminals to delay the alarm can be recognised.

The alarm should therefore be raised immediately (irrespective of the internal protocols, especially when the object is of particular historical/artistic value, it is recommended that the police be contacted immediately), and the real hypothesis of theft ascertained only afterwards: there is always time to report that it was a false alarm.

If the absence is discovered when the facility is open to the public, the theft may have taken place during the night or at some other time during closing hours. The burglar may therefore still be on the premises and, the size of the object permitting, may wait for the facility to be opened to the public in order to leave by mingling with the visitors.

In this case, it is necessary to check for the presence of any unauthorised persons in every part of the facility, including service rooms and those that are normally closed, bearing in mind that the object may have been hidden while awaiting a better opportunity to take it out.

If the object is found to be missing during opening hours, the thief and the object may potentially still be inside the facility. As soon as the alarm is raised, all visitors leaving must be checked, assessing the need to close the facility to the public or to close off some exits and restrict the exit left open for visitors to leave. If the size of the object stolen might enable it to be easily hidden, it might be necessary to check the visitors' clothes and personal effects. In these cases, the thief might abandon the stolen property and leave normally. Once all the visitors have left, all the premises, including service rooms and those that are normally closed, need to be carefully inspected.

The visitors themselves may, even involuntarily, contribute to the security of the collections on display, simply because they move through the rooms: it may be decided to make use of this, asking them to report any anomalous conduct or situation to the security staff.

The public should not be expected to react autonomously with regard to the thief: their contribution to security must be explicitly requested and, even in this case, it cannot be taken for granted that visitors will be able to notice anomalies, or that objects have been or are being removed (unless, of course, the thief has not

subjected, or is not subjecting artefacts to violence), or even that, if they do notice something, they will intervene or report it.
When the security staff realise that a theft is taking place, they must raise the alarm before intervening in any other way. This will ensure that they are not overpowered even before they are able to warn other members of staff and the police.
Assessing the situation and properly weighing up the pros and cons of intervention, the prime objective of the operation must be to prevent the removal of, or damage to, the object. The sound of the alarm and the verbal intervention of the member of staff who discovers the theft may themselves be sufficient to stop the thief and make him or her escape. The thief is interested in the object and will stop or abandon the operation if he or she is noted or discovered. An attempt at theft may turn into robbery if the thief decides to use violence in order to get hold of the object or to escape.
If the object is not in danger and if there are no other contraindications, it may be decided to delay direct action against the criminal, so that any action can be taken in complete safety, bearing in mind that of the staff and visitors. Physical action against the thief needs to be taken by the security staff when the object is in danger of being damaged or lost, carefully considering their own physical abilities and defence equipment in relation to that of the thief. Bearing in mind that the use of force must always be based on its adequacy, the aim of direct action against the thief must be to restrain him and hand him over to the police.
In any situation (theft that has been discovered only later, or attempted theft), any surfaces involved either in the break-in or where the object was placed, must not be touched, for they may bear traces that might help identify the person responsible. In the case of theft or attempted theft, the access registers and recordings from the CCTV system are to be made available to the police.
All members of staff who are able to provide information about the incident need to concentrate on all those situations that, possibly even observed days previously and considered anomalous but irrelevant, may help the investigators identify the person responsible for the crime. It should be borne in mind that, unless it is opportunistic, the theft will be planned with one or more visits to study the facility, the alarm system, and the movements and professionalism of the security staff, with a view to discovering those weaknesses that might facilitate the crime. Even if the theft was planned a long time previously, an inspection will probably have been made a few days previously in order to verify that the situation has not changed and, if it has, to reformulate the plan.

Robbery

Robbery is different from theft in terms of the threat or violence perpetrated against people, in order to gain possession of the object. The use or threats or violence may come either before or after the object has been taken. The latter may occur, for example, when the thief is discovered and, in order to retain possession of the object, decides to act with violence or threats against those who intervene in an attempt to stop him.
In the first case, however, the threats of violence are part of the criminal plan to take possession of the object, and the robbery is likely to be made by a number of persons, each of whom has a specific task: there is normally one who takes the object and another who creates the conditions for the robbery to be successful, immobilising the security staff and controlling the entrances and visitors.
In this case, when the criminals enter the facility and carry out their criminal acts, the situation is already known to the staff and visitors, whereas in the second case the robbery is a consequence of the alarm being raised or the security staff intervening: this is a situation that is not necessarily foreseen beforehand by the criminal and it tends to be more treacherous, with less predictable outcomes.
All countermeasures must aim to maintain the criminal's approach as one of threats, without him feeling the need to act violently. Since the safety of the staff and visitors is an absolute priority, if there is no room for intervention that can ensure a successful outcome, and in the event of armed robbery, it is necessary to avoid actions and conduct that might make the robber feel he is in danger and unable to carry out his plan. This is why it is best to raise the alarm only if it is certain that consequences involving those present can be avoided.
After raising the alarm – silently, if possible – the security staff must help reduce panic among the visitors, doing

their best not to appear afraid and, to the best of their abilities, conveying a feeling of calm and of having the situation under control: panic creates chaos and may make the attacker nervous, inducing foolhardy and unnecessarily violent reactions.
The security staff also need to make every attempt to recall the following aspects of the criminals, so that they can help the police with their investigations:
– *Clothing;*
– *Forms of conduct (if characteristic attitudes emerge);*
– *Height;*
– *Skin and eye colour;*
– *Nationality, as deduced from the language and accent;*
– *Any characteristic signs (tattoos, scars, earrings, etc.);*
– *Objects touched with their bare hands;*
– *Objects thrown away that might contain biological traces (cigarette butts, handkerchiefs, etc.).*

Both staff and visitors must avoid any actions that might be interpreted by the robber as a threat (for example, if their mobile phone rings, they should neither reply nor move to turn it off unless asked to do so) and, if it is not possible to slow down the action, they should let it come to an end as quickly as possible, without trying to prevent the criminals from escaping.

Actions by a mentally deranged person

The presence of a mentally deranged person in a cultural institution brings with it the real risk that he may attack a work of art in order to damage it. It is unlikely that his action will be directed against people, and the probability of a reckless action is generally proportional to the prestige of the object concerned. In any case, both visitors and staff need to remain calm and keep their self-control if they receive any offence from the person and not make fun of his behaviour.
After raising the alarm, the security staff need to attempt to establish a dialogue with the deranged person, trying to calm him down and avoiding any verbal excess or anger.
Should things turn violent, the security staff first need to evacuate all visitors from the room and, if their strength and defence equipment permits, they need to render the person harmless. Otherwise they will need to restrict his movements, if possible taking him out of the exhibition galleries while waiting for the police to arrive.

Terrorist attacks

Terrorist attacks are the most complex form of criminal emergency, and must be managed by law enforcement personnel.
Of all the possible forms of attack (using guns, explosives, or chemical or biological agents), the only one that allows some room for intervention to limit damage is an attack for demonstration purposes in the form of people in the facility being taken hostage. In this case, the only action that can be taken by security staff is to close the building to prevent other potential hostage-takers from entering.
Since it is not possible to know the terrorists' intentions or the level of risk they have decided to accept (disinterest in their own lives or, in the case of Islamic terrorism, the resolve to die are the worst possible conditions for the event to end well), the conduct of both staff and visitors must be one of absolute compliance.
The victims need to do all they can to remain calm and in control, avoiding any action or movement that might be seen as one of reaction.
The facility and the cultural objects it contains constitute a sounding board for an action that is designed to create a sense of insecurity among the public, demonstrating that the authorities are incapable of ensuring normal life for citizens and protecting them from antisocial behaviour.
The cultural objects, the visitors and the staff are the instruments by which the objective is achieved: the greater the prestige of the facility attacked and of the cultural objects it contains, and the higher the number of persons held hostage and the effect this has in the media, the greater the success of the terrorist action will be.
The fact that it is impossible to prepare effective countermeasures and defence in the facility against such forms of attack should not allow us to forget that the prime task of the state, through the police and security services, is to acquire the information required to prevent any such terrorist acts taking place on its territory.

Appendix

The 'Inspections Register' of the CC TPC Headquarters: crime-prevention survey form

1. Identification data of the museum

Name: _____

Location: _____

Address: _____

Director:
Surname: _____
First name: _____
Place of birth: _____
Date of birth: _____
Residential address: _____
Current address: _____

Technical Security Manager *(M. Decr. no. 569 of 20 May 1992, and no. 418 of 30 June 1995)*
Surname: _____
First name: _____
Place of birth: _____
Date of birth: _____
Residential address: _____
Current address: _____

Governing Authority

☐ Country _____
☐ Region _____
☐ Province _____
☐ Municipality _____
☐ Ecclesiastical _____

Days and hours of opening to the public

☐ Monday: from _____ to _____
☐ Tuesday: from _____ to _____
☐ Wednesday: from _____ to _____
☐ Thursday: from _____ to _____
☐ Friday: from _____ to _____
☐ Saturday: from _____ to _____
☐ Sunday: from _____ to _____

Contact:
Telephone _____
Fax _____
E-mail address _____

2. Brief description of the facility

Year of construction of the museum	
Is the museum housed in another building?	☐ YES ☐ NO
How many floors does it occupy?	
Total area	_____ m^2
Volume	_____ m^3
Basement if yes: no. of rooms/galleries _____	☐ YES ☐ NO
Ground floor if yes: no. of rooms/galleries _____	☐ YES ☐ NO
First floor if yes: no. of rooms/galleries _____	☐ YES ☐ NO
Second floor if yes: no. of rooms/galleries _____	☐ YES ☐ NO

3. Security of the external perimeter

a) Are the outside walls of the building those of the outer perimeter of the museum? ☐ YES ☐ NO
In terms of security:
– Is there a passive defence system? ☐ YES ☐ NO
– Are the openings protected by railings? ☐ YES ☐ NO
– Are the windows and doors fitted with burglar alarms and sensors? ☐ YES ☐ NO
– Are the windows fitted with laminated/crime-prevention glazing? ☐ YES ☐ NO
– Is the front door armour-plated? ☐ YES ☐ NO If yes, type of lock _____
– Is there is a video surveillance system? ☐ YES ☐ NO If yes, no. of video cameras _____
– Is there a caretaker/security guard at the entrance? ☐ YES ☐ NO
– Type of lighting system _____
– Additional notes _____

b) Is the museum building fenced? ☐ YES ☐ NO
If yes, at about _____ metres
The fence is _____ metres tall
The fence is made of: ☐ masonry
☐ wire mesh
☐ other: _____

– Is it guarded? ☐ YES ☐ NO If yes, by whom? _____
– Is it monitored from a distance? ☐ YES ☐ NO If yes, by whom? _____
– external gate: ☐ monitored ☐ monitored remotely ☐ not monitored
Additional notes _____

c) Brief description if of another type _____

Number of sets of keys ..... Number of persons authorised to use them .....

Are all the sets of keys stored in protected areas (safe, vault, etc.)? ☐ YES ☐ NO

Are the locks and alarm codes changed periodically? ☐ YES ☐ NO

Are procedures in place to ensure the safety of the person who opens/closes the museum? ☐ YES ☐ NO

Has the name of a person who can open the building in case of an alarm been given to the authorities? ☐ YES ☐ NO

4. Access to the facility

The facility was built in _____

Are there other entrances to the exhibition galleries? ☐ YES ☐ NO
if yes:
☐ they are armour-plated
☐ they are fitted with safety locks
☐ they are fitted with alarm sensors
☐ they are monitored by video cameras with a recording system
☐ they are monitored by security staff

The partition walls in the exhibition galleries are made of _____
and are _____ cm thick

The roof of the building is made of _____

Are there openings in the roof? ☐ YES ☐ NO

Is the roof accessible from the floor below and/or from adjacent buildings? ☐ YES ☐ NO

The windows and openings that give onto the outside:
☐ are equipped with burglar-proof glass
☐ are fitted with firmly anchored security bars or grilles
☐ are fitted with anti-burglary alarm sensors
☐ are monitored by video cameras
☐ are monitored by security staff
☐ Additional notes

Is the alarm system linked directly to the police? ☐ YES ☐ NO
If yes, to which unit? _____

5. Surveillance and custodian services

The security staff of the structure:
- work as employees of the governing authority of the museum ☐ YES ☐ NO
  If yes: name of institution _____ type of contract _____
- have special training for security services
  If yes, type and duration: _____
- are _____ in number
  Are they armed? ☐ YES ☐ NO
  If yes, type of weapon issued _____
- do they have radio links? ☐ YES ☐ NO; If yes, type of link: _____
- Do they wear uniforms or other distinctive signs? ☐ YES ☐ NO eventuale descrizione _____
- Do they personally check the state of the works in the museum before each shift? ☐ YES ☐ NO
- Do they have a special protocol with essential tasks to be carried out during each shift? ☐ YES ☐ NO

The video surveillance system outside the museum:
- Is there is a video surveillance system? ☐ YES ☐ NO
- If yes, is there a video recording system? ☐ YES ☐ NO
  If yes, for how many days are the images kept? _____ days
- The cameras are placed at a height of _____ metres
- Are the images recorded remotely? ☐ YES ☐ NO
- Are they transmitted to a location outside of the museum? ☐ YES ☐ NO
- Are the recordings kept in a protected place? ☐ YES ☐ NO
  If yes, state where _____
- Any suggested changes to be made to the video surveillance system _____

The security service:
- Does it cover the full 24 hours? ☐ YES ☐ NO
  If no, what hours are covered? _____
- Is it organised in shifts? ☐ YES ☐ NO
- Additional notes _____

6. Security and aspects of environmental degradation

Is the facility fitted with equipment that takes into account agents of environmental degradation (temperature and relative humidity, lighting, dust, pollutants, etc.) ☐ YES ☐ NO
If yes, which ones? _____

7. The flow and safety of visitors

Visitors to the museum:
- Are visitors required to go through a metal detector upon entry? ☐ YES ☐ NO
- Are they checked, together with baggage/backpacks/handbags/etc., using special equipment? ☐ YES ☐ NO
  If yes, specify the type of equipment _____

- Can they use special cloakroom facilities? ☐ YES ☐ NO
- Are there special signs asking them to check in bags and luggage which do not contain electronic equipment? (mobile phones, radios, alarm clocks, etc…) ☐ YES ☐ NO
- Are they accompanied throughout the tour? ☐ YES ☐ NO
- Are their identity papers checked at the entrance to the museum? ☐ YES ☐ NO
- Are there limits on the maximum number of people in individual rooms, due to the sensitivity and importance of the works on display or to environmental factors? ☐ YES ☐ NO
- Can they make direct contact with the works of art on display? ☐ YES ☐ NO
- Are there barriers between the works and the visitors? ☐ YES ☐ NO
- Are there beam-sensor alarms? ☐ YES ☐ NO
- Additional notes _____

8. Indoor security

Rooms used for the display of works of art
- Are they fitted with burglar alarm system? ☐ YES ☐ NO
  If yes, indicate the type _____
- Are they monitored by video cameras? ☐ YES ☐ NO
- Are they monitored by security staff? ☐ YES ☐ NO
- If yes, who is entrusted with surveillance and how is this service carried out? _____
- Additional notes _____

The works of art on display
- Are they kept individually in burglar-proof glass cases? ☐ YES ☐ NO
- Are they fitted with burglar alarm sensors? ☐ YES ☐ NO
- Are they monitored by video cameras? ☐ YES ☐ NO
- Are they guarded by security staff? ☐ YES ☐ NO
- Additional notes _____

- Is there a control room in the facility? ☐ YES ☐ NO
- If yes, does it have access control? ☐ YES ☐ NO
- Are there temporary resting places for security staff? ☐ YES ☐ NO
  If yes, where they are located? _____
- The ground plans of the museum are kept by _____
- Additional notes _____

9. Vault

- Is there a vault on the premises? ☐ YES ☐ NO
  If yes, where is it?
  ☐ in the basement ☐ on the ground floor ☐ on the first floor
  ☐ other _____
- Does the vault generally contain only works of art? ☐ YES ☐ NO
  If no, what does it contain? _____

– Is the vault in a room with video surveillance? ☐ YES ☐ NO
  If yes, with how many cameras? _____
– Does the room have burglary protection systems? ☐ YES ☐ NO
– Is the door of the room armour-plated? ☐ YES ☐ NO
– Is there any other access to the vault other than the main door? ☐ YES ☐ NO
– Are there any safes? ☐ YES ☐ NO
  If yes, indicate the type _____
– Names of persons authorised to access the vault:
  _____
  _____
  _____
– Does the vault have keys to open it? ☐ YES ☐ NO
– Number of sets of keys for the vault _____
– Number of people in possession of the keys _____
– Does the vault have a mechanical combination lock? ☐ YES ☐ NO
– How many people know the combination? _____
– How frequently is the combination changed? _____
– Does the vault have an electronic combination lock? ☐ YES ☐ NO
– How frequently is the combination changed? _____
– Additional notes _____

10. Security during emergencies

Is there an emergency plan? ☐ YES ☐ NO

Indicate (if applicable) the procedures/practices adopted by museum staff in the event of the following emergencies:

– Sudden blackout: _____
– Is there a UPS? ☐ YES ☐ NO
– A visitor is suddenly taken ill: _____
– Start of a fire: _____
– Presence of suspicious packages: _____
– Additional notes: _____
– Are there signs explaining emergency procedures? ☐ YES ☐ NO

11. Observations

_____
_____
_____
_____
_____

12. Suggestions

_____
_____
_____
_____
_____

13. Personal data of those present during verification

Surname : _____
First name: _____
Place of birth: _____
Date of birth: _____
Residential address: _____
Current address: _____
Job title within the museum: _____
Signature: _____

Surname : _____
First name: _____
Place of birth: _____
Date of birth: _____
Residential address: _____
Current address: _____
Job title within the museum: _____
Signature: _____

Place and date of the assessment

_____ , ___/___/_____

Assessment staff

_____

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