

ARRE Technical Meeting "Fire Safety"  
 Palace of Versailles, 30<sup>th</sup> November & 1<sup>st</sup> December 2015

## Summary of discussed topics

1) Has your residence ever been damaged in the past? What were the causes / origins (malice, obsolescence of equipment, external human or natural factors)? How were these incidents managed / contained? What were the consequences?

Schönbrunn	The Palace of Schönbrunn has only once been damaged, during 2nd World War when an unexploded bomb stroke the main building and went through the upper stories to the Great Gallery. The ceiling fresco then was damaged, the fragments of it were being transferred to the so called 'Bundesdenkmalamt' (Official Antiques and Monuments Office in Austria) where they are still conserved today. The fresco in the Great Gallery was repainted.
SPSG (Potsdam)	In recent times we had a couple of "near" fire accidents. One example: <ul style="list-style-type: none"> <li>- A near fire accident was caused by a mobile floor lamp (halogen) that was standing too close to a wall covered with historic wooden panels</li> <li>- the wooden panels didn't catch fire but severe brand marks occurred on the surface</li> <li>- the halogen lamp was exchanged for a new LED lamp</li> </ul>
Palais princier de Monaco	Yes. Several fires have started. A fire in the garage led to the evacuation of the north gallery. In 2008, a fire started in the attic when part of the roof was being repaired. All of them were quickly put out.
Palace of Compiègne	The Palace of Compiègne has not had a real fire since 1919, when the installation of heating after WW1 by the governmental department of Liberated Regions caused a fire that destroyed part of the Emperor's Wing. There have been a few minor incidents since the eighties, like a fire in a workshop dustbin caused by human negligence or another fire that started due to an electrical fault with a boiler in one of the apartments. Each time, these incidents have been dealt with easily as they were very limited and had no impact on the residence.
Paleis Het Loo Apeldoorn	Flooding after heavy rainfall / Palace is at the lowest point of Apeldoorn/ drainage has been improved.
The Royal Łazienki Museum	During World War II the garden and its monuments were not seriously damage. In 1944, the Palace on the Isle was partially damaged. A fire destroyed the entirety of the ceilings, valuable paintings, floors, stucco decorations and chandeliers
Parques de Sintra Monte da Lua, S. A	In the night of the 4 <sup>th</sup> to 5 <sup>th</sup> October 1934, there was a big fire in National Palace of Queluz. It caused damage on the upper floor of the Palace, affecting mostly the area of the Ambassador's Hall and the Robillion Pavilion. The causes are unknown until today. After this, several restoring strategies were done, including construction work.

Historic Royal Palaces	Hampton Court Palace has suffered a number of fires over the centuries. Perhaps the most serious was in 1986 where a Wren's Baroque King's Apartments were badly damaged by fire. The cause of fire was uncertain, but it began in a residential apartment. The occupant of the apartment died in the fire. The palace's volunteer salvage team was able to rescue most of the collection items from the King's Apartments with the assistance of the London Fire Brigade. However, there was significant damage to the fabric of the building from the fire and from fire-fighting water. The restoration work cost in excess of £10 million and took five years to complete.
Museum of King Jan III's Palace at Wilanow	Yes. Each time causes were of external human factor: renovation works. Consequences: strong supervising on renovation works and teams.
The Peterhof State Museum-Reserve	Yes, in the period of 1941-1944. Total destruction of several facilities of the residence during the military actions. Scientific restoration and reconstruction in the second half of the twentieth century.
Venaria Reale	No

## 2) In its current state, how is your Fire Prevention Department organised?

Detection system: How is it deployed? Do you have an alarm system throughout the entire building? How is it managed? Have you carried out partitioning work to prevent the possible outbreak of a fire?

SPSG (Potsdam)	<p><u>Detection system:</u></p> <ul style="list-style-type: none"> <li>- alarm systems are installed in every castle, but only a few are technically up to date</li> <li>- the alarm system contains different elements: fire detectors (responding to smoke or/and heat), smoke extraction system, acoustic alarm sirens, escape lighting</li> <li>- the alarm system is connected to the security headquarter and to the public fire station in Potsdam</li> </ul> <p><u>Partitioning work to prevent the outbreak of a fire:</u></p> <p><u>Architectural / technical solutions:</u></p> <ul style="list-style-type: none"> <li>- installation of fire-resistant doors and smoke-resistant doors</li> <li>- dividing the building into different brand sections</li> <li>- structural upgrading of walls (fire walls) and ceilings according to their appropriate fire classification</li> <li>- installation of fire-resistant shutters in ventilating shafts and channels</li> <li>- installation of shafts where the fire brigade can pull through their fire hoses</li> <li>- outdoor installation of well systems containing water for fire fighting</li> <li>- providing mobile fire extinguishers</li> <li>- installation of alarms systems, fire detectors, smoke extraction systems</li> <li>- removal of old electrical cables</li> <li>- installation of new cable systems according to current technical regulations</li> </ul>
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	<p><u>Organizational solutions:</u></p> <ul style="list-style-type: none"> <li>- creating specific fire safety regulations for each building (in working progress)</li> <li>- attaching security plans on selected positions (not on a current status everywhere)</li> <li>- marking emergency exits with signs and emergency lighting</li> <li>- briefing the staff</li> <li>- reducing potential fire loads</li> </ul>
Palace of Compiègne	<p>The Palace of Compiègne has a 'category A' fire safety system. There is an automatic fire detection system in place in: all of the attic, the workshops, utility areas (electrical equipment), temporary exhibition rooms, the storerooms of the Blérancourt museum located on the 2<sup>nd</sup> floor of the Queen's Wing. This implies that the majority of spaces in the palace are not equipped (in particular, the museum spaces, except those devoted to temporary exhibitions). Only the Blérancourt storerooms are equipped with a fire alarm. The automatic fire detection systems of the other spaces only ring at the Central Security Station (CSS); an officer then needs to go and check out the situation. If there is a fire, the CSS will sound the alarm and people will be evacuated. Firewalls have been installed to partition part of the attic and fire doors have been installed at the entrance of the boiler rooms, in accordance with current legislation.</p>
Palais princier de Monaco	<p>The Palace is divided into three sites (The Palace, Cavalier and Vaguemestre areas). All of them are equipped with optical smoke detectors as far as the attic; there are 749 detectors just in the Cavalier site. They are connected by cable to the low-voltage switchboard and the control station of the Carabiniers (the palace guards). The guard post has a direct hotline link to the Fire station. The Cavalier site also has an alarm, unlike the Palace site. Some parts (dome of the Palatine Chapel) have an infra-red fire detection system. When a fire is detected, the fire detection system is triggered. The guards have 5 minutes to get there and verify the situation. After this, the central Fire safety system processes the information and triggers the fire safety devices and procedures:</p> <p>The alarm sounds (110 decibels), fire doors are closed, valves are closed (to protect the air-conditioning system), and the smoke extraction fans are triggered. At the same time, evacuation is begun. One (or two) security guard teams carry out the evacuation. Under the orders of the head Guard there is an evacuation leader and tailender. People assemble in the courtyard (cour d'Honneur), smaller areas or the gardens. (The alarm bell, partitioning and smoke extraction are only effective in the new areas, the so-called 'Cavalier's rooms'). In the other parts, which are historical heritage areas, installing this kind of system would involve work that would disfigure the appearance. This system is checked once a month by Siemens.</p> <p>In certain delicate areas of the palace, there are sprinklers: in the compactus archives and library, administrative offices, IT rooms and furniture storerooms. If smoke or abnormal heat are detected in two places, the alarm sounds after 30 seconds and compressed gas (in 300 bar cylinders) is released at a rate of 45 bars/minute through evacuation nozzles in the different rooms (Nitrogen, Novec or FM200 (which is generally being replaced by Novec)). There is no preliminary check in these areas. This system aims to preserve heritage items that are present in these delicate areas.</p>

	<p>From 8pm to 6am there is a fireman present on site. He sleeps next to the guard post and carries out an inspection at 9pm and 5.30am. In addition to these inspections, the Carabinieri also go round the premises, carrying out inspections at various hours.</p>
Paleis Het Loo Apeldoorn	<p>30 people are members of the fire prevention team / there is a fire alarm with a link to the fire brigade / Management and maintenance by the technical service</p>
The Royal Łazienki Museum	<p>An Internal Protection Service Department is in place; it is headed by the Safety Manager – the Chief of Security. He is responsible for the Museum security, including the fire protection.</p> <p>The Internal Protection Service Department comprises:</p> <ul style="list-style-type: none"> <li>- The Museum Security staff (40 people) who patrol the Museum facilities and the garden for 24 hours a day. The guards are deployed in 8 security posts in the garden area and operate an advanced monitoring centre;</li> <li>- A Fire Safety Expert (1 post) – fire protection engineer, a State Fire Service officer;</li> <li>- A Defence Expert;</li> <li>- An Occupational Health and Safety Expert.</li> </ul> <p>Main duties of the Fire Safety Expert:</p> <ul style="list-style-type: none"> <li>- Organizing the fire protection in the Museum and supervising regulatory compliance;</li> <li>- Ensuring operational readiness of equipment and fire control system in the facilities and the garden area (external hydrants);</li> <li>- Managing maintenance and servicing of equipment;</li> <li>- Ensuring proper signage of emergency exits and fire routes.</li> </ul> <p>The Museum has put in place an advanced fire-extinguishing system and equipment:</p> <ol style="list-style-type: none"> <li>1. External hydrants, installed in the garden – 25 units;</li> <li>2. Internal hydrants – 31 units; In 2010-2011, the garden hydrant network garden was modernized and in the years 2011- 2015, as part of the renovation of historic buildings, fire hydrants were replaced.</li> <li>3. Fire extinguishers – 240 units;</li> <li>4. Fire blankets – 25 units.</li> </ol> <p>In 2014, an advanced Monitoring Centre was launched in the Museum. It supplements the entire system involving people and equipment supervising the Museum’s security.</p>
Historic Royal Palaces	<p>Following the Windsor Castle fire of 1992 all the Royal Palaces were surveyed by fire prevention consultants. The recommendation was to protect the palaces with automatic fire detection in all historic parts of the buildings and, where possible, to place detection in void spaces measuring more than one cubic metre. At the same time fire breaks were created in the building. Hampton Court Palace was divided into four 60 minute fire compartments. Additional compartmentation was added to protect high risk areas and staircases.</p>
Schönbrunn	<p>The topic of fire prevention at Schönbrunn Palace is not organised in one department but dealt with by the construction department in cooperation with utilities management, supported by the external professional fire brigade and the so-called DLT (Damage Limitation Team), made up from employees of Schönbrunn Palace.</p>

	<p>Schönbrunn Palace is equipped with a comprehensive system of detectors (heat, smoke and linear detectors) connected at any time to a central fire detection unit. Furthermore in some parts there are <u>smoke extractor systems</u>, extracting air permanently and leading to detectors checking for possible particles of smoke in the air.</p> <p>In case of smoke there is an automatic <u>smoke ventilation system</u> coming into effect, automatically opening upper windows in order to get rid of the smoke immediately.</p> <p>Partitioning work: As well the state rooms as all corridors are organised in fire compartments.</p>
Parques de Sintra Monte da Lua, S. A	Our fire detection system is deployed by the following equipment: smoke detectors and manual alarm call points. These devices are installed in all buildings areas (including roofing areas and peripheral spaces). This system is centralized into a security center, located in Pena's National Palace, that manages all of the equipment associated with the fire detection system and video surveillance. All fire detection systems and fire extinguishers are checked and maintained once a year.
Museum of King Jan III's Palace at Wilanow	There's no independent Fire Prevention Department. The fire protection specialist is located at the Architecture and Environment Department. We have an alarm system throughout the entire building. It's a part of the system which links museum to external fire-fighting units. It works automatically.
The Peterhof State Museum-Reserve	All the museum facilities of the Peterhof State Museum-Reserve are equipped with the system of fire detection. We use radio-channel and wire fire alarm systems, made in Russia. The signal arrives first at the guard post of a specific Museum facility, then to the Central security office of the Museum. Additional fire partitions in the buildings or the cultural heritage have never been constructed.
Venaria Reale	<p>The building is entirely protected by an advanced fire and smoke detection/alarm system as follows: each room is equipped with smoke detectors on the ceiling connected by coaxial cable to the Control Room (CR) that is staffed 24 hours a day, 7 days a week. The CR also receives local signals from manual pull stations in the whole Reggia, activated by the staff, internal and/or external.</p> <p>Fire compartmentations divide museum from offices and other activities (bookshop, restaurant/bar, etc.) and fire doors (i.e. REI 120), fitted with crash bars, are monitored by CCTV, relaying footage by coaxial cables through a subsystem connected to maxi-screens in the CR. CCTV footage is recorded on 10 dedicated DVR recorders. Emergency lighting is provided by UPS units on independent lines, so as to ensure constant lighting, filtering power drops, overloads, micro interruptions, that are activated in case of blackout. In addition to the signal relayed to the Control Room, the fire detection alarm is also amplified using sound speakers (powered by UPS units) in all the rooms.</p> <p>The external company dedicated to the room security guard is also in addition responsible for emergency situation (fire and first aid problems) and also evacuation of the public and consists of: 1 team coordinator, 12 emergency operators and 1 person in charge of communication; as regards external emergency plans, the position of the complex ensures the approach and the positioning of emergency vehicles and equipment and the evacuation of the premises to bring people out of the building. For the offices and not museum-dedicated rooms, the emergency team is internal (colleagues directly employees</p>

	<p>of the Reggia) and is constituted by about 18 person.</p> <p>The Control Room alerts the local Fire Brigade (on call 24h/7d, located around 12 km from the Reggia that can be reached in around 9 minutes) and the internal emergency officer. In addition to the signal relayed to the Control Room, the fire detection alarm is also amplified using sound speakers (powered by UPS units) in all the rooms of the Reggia, offices included.</p> <p>The last inspection report by the Fire Brigade is dated 15 June 2014.</p> <p>All routine checks are recorded in the report log that is kept by the Health, Safety and Environment Manager.</p> <p>It is estimated that the emergency plan can be activated in 5 minutes in case of emergency in areas where the staff is nearby. Emergency plans are organised according to opening times when visitors are inside the building. When the Reggia is closed to the public in case of emergency the staff on site manually activate the alarm system, while external operators are alerted by the Control Room that is staffed 24h/7d according to the emergency procedures outlined in the emergency plan.</p>
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Teams: Do you have dedicated fire-fighting staff? Do you have staff responsible for the evacuation of visitors and works of art? Do you have a team on site? Are teams internal or external? Do you have a direct line to the fire-station? How are external objects organized? How do you ensure the training of staff? (Offensive team / teams dedicated to the evacuation of the public). Are you able to provide 24H surveillance? Is the access plan clearly marked for external agents?

Schönbrunn	<p><u>Do you have dedicated fire-fighting staff?</u> no proper one, but a direct automatized link to the professional fire brigade Vienna.</p> <p><u>Evacuation of visitors:</u> mainly carried out by our visitors managers together with their staff (guides, surveillance staff)</p> <p><u>Evacuation of works of art:</u> carried out by the DLT (Damage Limitation Team), made up of employees from different departments (construction, shop, marketing, utilities management, visitors management, etc.)</p> <p><u>Do you have a team on site?</u> No</p> <p><u>Are teams internal or external?</u> DLT is internal; 10 employees are special representatives for protection against fire (regularly checking detectors, functionality of fire-proof doors, etc.); professional fire brigade is external</p> <p><u>Do you have a direct line to the fire-station?</u> Yes</p> <p><u>How do you ensure the training of staff?</u></p> <ul style="list-style-type: none"> <li>- Guides / surveillance in the state rooms: 2 unheralded practices per year during regular opening hours (evacuating visitors)</li> <li>- Licensed tourist guides: Only licensed Austrian guides who have had a special training on security, fire logistics, etc. at Schönbrunn Palace, are allowed to go on guided tours with their groups. In case of an emergency it's their duty to bring their group out of the palace the quickest way.</li> </ul> <p><u>Are you able to provide 24H surveillance?</u></p> <p>Yes, as we</p> <ul style="list-style-type: none"> <li>- have a detector system in direct link to the fire brigade</li> <li>- have a security control center, available 24h; in case of an emergency the DLT is contacted via SMS for an operation.</li> </ul> <p><u>Is the access plan clearly marked for external agents?</u></p> <p>At the security control center there are plans of various kinds: fire protections plans, plans of objects in the state rooms, together with a master key.</p>
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	Twice a year the professional fire brigade is having an inspection on the spot to check the building, access logistics, etc.
SPSG (Potsdam)	<ul style="list-style-type: none"> <li>- Authorised persons: castellan, supervisory staff, guides: responsible to evacuate visitors</li> <li>- There are also dedicated persons (internal staff of SPSG) that are responsible to communicate with the firemen on the site</li> <li>- The training of the staff has to be improved</li> <li>- The alarm system has a direct line to the fire - station</li> </ul>
Palace of Compiègne	<p>No internal dedicated fire-fighting staff as such, but staffs that are trained as well as possible. Some of the staff hold a fire safety officer's qualification. In addition, all receptionists and surveillance staff receive training in fire-safety and fire-hose station handling. All staff receive training on the handling of fire extinguishers. A guide on the procedure to follow in case of fire is currently being drafted / updated by our safety officer. An evacuation exercise will be carried out with the fire-brigade in December 2016. There is a direct line to the departmental fire and emergency service in Beauvais: They are responsible for sending out teams and equipment for any intervention required. There is a fire safety plan for the fire brigade, which is updated regularly (latest version = June 2015). They come regularly to carry out exercises and reconnaissance visits (approximately every 2 years).</p> <p>24h surveillance is guaranteed by the Central security station (daytime and night-time teams). The fire brigade carry a copy of the fire safety plan with them.</p> <p>For the time being we have not used volunteers because the question has never really arisen (yet?). Maybe such a system could be implemented with the current procedural guide that is being updated (it should be ready by end 2016 at the latest). Part of it should already be implemented by the end of the year.</p>
Palais princier de Monaco	<p><u>Teams: do you have dedicated staff for fire-prevention? Yes, Carabiniers and firefighters. One of the Carabiniers is specialised in the matter. Do you have staff responsible for the evacuation of visitors and works of art? Yes. Are teams internal or external? Both (Carabiniers and fire fighters).</u></p> <p>Do you have a direct line to the fire station? Yes</p> <p>How are external bodies organised? The fire brigade have a plan of the palace and can also be assisted by the Carabiniers. They can also use the dry risers present in the palace.</p> <p>How do you ensure the training of staff? (Offensive team / teams dedicated to the evacuation of the public). <u>The Carabiniers hold a level 1 fire safety officer's qualification and an 'IGH2' (High-rise building safety level 2) The Carabiniers have also received forest-fire training, specifically for intervention at the Roc Agel residence. The Carabiniers have fire-extinguishing and emergency first-aid training.</u></p> <p>Are you able to provide 24H surveillance? <u>Yes.</u></p> <p>Is the access plan clearly marked for external agents? Yes (3 access points)</p> <p><u>Do you use any volunteers? No volunteers</u></p>
Paleis Het Loo Apeldoorn	<p>Internal Guardians are responsible for the evacuation of visitors.</p> <p>Internal Guards are trained annually</p> <p>There is a fire alarm with a link to the fire brigade</p> <p>There is an internal pager alarm</p>
The Royal Łazienki Museum	An Evacuation Management Task Force has been set up. The Task Force consists of the staff who normally perform other tasks (e.g. guards, conservators, gardeners, visitors' assistants, administration staff). In the event of a possible

	<p>emergency they become responsible for the evacuation of people and collections. The operations of the Task Force are overseen by the Safety Manager. In addition to basic fire safety training, members of the Task Force attend special training courses regarding evacuation.</p> <p>All employees of the Museum participate in mandatory fire safety training. It is conducted by the Fire Safety Expert and its goal is to acquaint the employees with:</p> <ul style="list-style-type: none"> <li>- Their tasks, duties and fire safety regulations,</li> <li>- Handling fire extinguishing and life-saving equipment,</li> <li>- Ways of eliminating fire safety threats.</li> </ul> <p>In addition, once every year special drills take place to assess the organisation and the conditions for the evacuation of people from all the buildings.</p> <p>Once every three years refreshing training sessions are held during which the staff are informed of possible changes relating to the fire safety regulations.</p> <ol style="list-style-type: none"> <li>1. All the buildings of the Museum are equipped with a Fire Alarm System and are subject to 24h surveillance.</li> <li>2. Each room is equipped with smoke detectors. The Fire Alarm System is regularly modernized and serviced. Inspections are carried out as needed, however they take place at least once every quarter.</li> <li>3. The buildings are equipped with sirens and manual call points.</li> <li>4. The Fire Alarm Control Panel is located at the post of the Museum Security Headquarter.</li> <li>5. An alarm signal triggered by a sensor is transmitted to the Museum Security Headquarter. Then, after the time required to verify the emergency, it is transmitted to the Fire Service.</li> <li>6. The Museum Security monitors the Fire Alarm System at all times.</li> </ol>
Historic Royal Palaces	<p>The fire alarm system is monitored by an in-house security team from a 24 hour control room located close to the main palace building. There is no automatic call to the emergency services. Fire alarm activations are investigated first and an emergency call only made for confirmed fires. A 'battle box' is maintained in the control room. This contains buildings and services plans of the palace. IT also has all the information in PDF format on DVDs so the fire service can view plans electronically.</p> <p>Warding and security staffs receive fire extinguisher training. Specialist fire extinguisher training is provided to staff who supervise 'hot work' (welding, etc.) at the palace. The evacuation of state rooms is managed by State Apartment Warders (room stewards), who receive regular training on evacuation and other emergency procedures. They also practice using evacuation equipment provided for people who use wheelchairs.</p>
Parques de Sintra Monte da Lua, S. A	<p>We have a security coordination group that works in all Palaces -National Palace of Queluz (PNQ) National Palace of Pena (PNP) and National Palace of Sintra (PNS) -managed by Parques de Sintra Monte da Lua. This department is internal, although it is not only dedicated to fire-fighting. The connection with the security station is direct thanks to the alarms set all over the Palaces, that provide a fast answer from the security teams. In 2010 an emergency fire evacuation exercise was held in the National Palace of Sintra. There still haven't been done simulations in the other Palaces. Surveillance is guaranteed 24h a day in all Palaces. We have a clearly marked access plan available to authorities or other external agents in case of emergencies.</p>



Museum of King Jan III's Palace at Wilanow	<p>Do you have dedicated fire-fighting staff? No.</p> <p>Do you have staff responsible for the evacuation of visitors and works of art? Visitors yes, art no. Yes.</p> <p>Do you have a team on site? No. .</p> <p>Are teams internal or external? Evacuation team is internal. Fire fighters team is a state fire service.</p> <p>Do you have a direct line to the fire-station? Yes.</p> <p>How are external objects organized? How do you ensure the training of staff? (Offensive team / teams dedicated to the evacuation of the public). The organization of external objects depends on State Fire service rules.</p> <p>Are you able to provide 24H surveillance? Yes.</p> <p>Is the access plan clearly marked for external agents? Yes.</p>
The Peterhof State Museum-Reserve	<p>The Museum has 29 professionals of fire protection in its staff. In addition, the fire protection of the Museum facilities is provided by a separate fire brigade, as a part of the team of the Ministry of Emergency Situations for the town of Peterhof. Also the Working Department of the Museum has 12 persons in the Voluntary team for fire prevention and protection in the territory of the Museum. Curators, custodians and staff, responsible for the visitors, pass regular training in actions in case of emergency situations.</p>
Venaria Reale	No

Building: How would you define your actions on heritage? As regards materials, do you use an array of innovative products to ensure the conservation of objects and spaces? (E.g. woodwork, etc.).

SPSG (Potsdam)	<p><u>Our definition of actions on heritage:</u></p> <ul style="list-style-type: none"> <li>- We try to keep the amount of actions less as possible - for the benefit of conservation</li> <li>- We are putting a lot of effort to work out compensatory solutions (achieving releases from legitimate law regulations)</li> </ul> <p><u>Innovative products:</u></p> <ul style="list-style-type: none"> <li>- We cannot demonstrate any representative examples where innovative products were use.</li> </ul>
Palais princier de Monaco	<p>All inflammable materials have been eliminated from the attic. A partitioning system has been installed (heat-resistant doors up to 180°, walls that can withstand fire for 2 hours). Partitioning is also present in the spaces between the electrical tubes</p>
Palace of Compiègne	<p>No real action on materials / products to ensure preservation of objects and spaces.</p> <p>Some of the specifications of the departmental fire and emergency service (e.g. widespread use of automatic fire detectors) are laid down in the Palace guidelines.</p>
Paleis Het Loo Apeldoorn, Netherlands	<p>This falls under our care division Collection. They have materials and means to protect the collection.</p>
The Royal Łazienki Museum	<p>Attested materials are used in conservation works. In addition, for example, carpets and curtains are covered with preservatives which enhance their fire resistance properties.</p>
Historic Royal Palaces	<p>Where possible we avoid using products which will promote fire spread. This sometimes means sourcing bespoke products, or treating products in-house with fire resistant applications.</p>

Parques de Sintra Monte da Lua, S. A	All the objects have a periodical maintenance. A cleaning daily routine, part of the preventive conservation plan, assures that dust accumulation and combustion hazards are minimized. The collections which are not exposed in the visitor's circuit are kept in monitored storage. Fireproof varnishes and fire retardants are used in wooden structures, mainly on roofs.
Museum of King Jan III's Palace at Wilanow	How would you define your actions on heritage? Prevention. As regards materials, do you use an array of innovative products to ensure the conservation of objects and spaces? (E.g. woodwork, etc.). It is not practiced. Even in case of replacing an object with a copy, the materials ought to follow the original ones.
The Peterhof State Museum-Reserve	The Peterhof State Museum-Reserve very carefully handles the existing historic décor and constructions of the residence's facilities. New materials are used only in cases of acute necessity in technical areas.
Venaria Reale	No

Collections: Is there an emergency plan to safeguard the collections? Do you have a safeguarding priority strategy (have you considered sacrificing parts to save others)? Do you make a distinction in your treatment of fixed decorative elements and movable items? Do you have temporary storage locations for evacuated items?

Schönbrunn	<p>Is there an emergency plan to safeguard the collections? In the case of an emergency it is the DLT that, in accordance with the fire brigade, evacuates objects of arts from specially fixed rooms near to the centre of emergency.</p> <p>Do you have a safeguarding priority strategy (have you considered sacrificing parts to save others)?</p> <p>There are manuals fixing for each room the priority of the objects of arts in it, with pictures of the objects. In addition, the same plans are available behind 'hidden doors' in each of the rooms.</p> <p>Do you make a distinction in your treatment of fixed decorative elements and movable items?</p> <p>Both are important, the objects are evacuated according to their set priority.</p> <p>Do you have temporary storage locations for evacuated items?</p> <p>In the short run the evacuated objects are brought to the nearest possible room where they are safe from the incident of emergency. In the long run they are brought to either proper storage room in the building or to locations being placed at our disposal in case of emergency via the so-called 'Notfallverbund'.)</p> <p>This is an Austrian wide emergency network between institutions / museums, having agreed upon to help out with either staff, equipment, storage room, etc. in case a partner museum needs help after an incident.</p>
SPSG (Potsdam)	<ul style="list-style-type: none"> <li>- We have floor plans with rather rough marking of sections of special attention, according to what the fire brigades asked for. These plans give only an idea of a safeguarding priority strategy, this aspect was not yet discussed in within the SPSSG.</li> <li>- There are no exercises (incl. repetition) for staff and/or fire brigades to get experience and training in moving works of art.</li> <li>- There is no room-for-room list with a hierarchy of works of art.</li> <li>- If there was a list it would not consequently respect the question of fixed or movable, because there is no strict border in between: a fixed object may hang (like a chandelier), being fixed by screws (like a wall light) or fixed by plaster (like a relief or console).</li> <li>- There is no temporary storage location for this case yet.</li> </ul>

Palais princier de Monaco	<p><u>Collections</u>. Is there an emergency plan to safeguard the collections?  No, implementation in progress  Do you have a safeguarding priority strategy (have you considered sacrificing parts to save others)? In progress (yes)  Do you make a distinction in your treatment of fixed decorative elements and movable items? In progress (yes)  Do you have temporary storage locations for evacuated items? In progress</p>
Palace of Compiègne	<p>A safeguarding plan is being drawn up. The idea is to select the items to be saved first (so yes, we do sacrifice some to save others). Different treatment is required for fixed decoration (which cannot be evacuated, and must therefore be protected in situ) and mobile elements that can be evacuated. NB. Certain large or voluminous artworks can also be protected on site (with sheeting, for example).  Temporary storage spaces have been designated inside the palace. As it is very large, one can assume that a fire would not reach all the wings at once and that the artworks could be moved to part of the palace that has not been damaged. For the moment, no temporary storage space outside has been clearly identified.</p>
Paleis Het Loo, Apeldoorn	<p>There is a contingency plan. Precious collection first. Storage is temporary fireproof compartments</p>
The Royal Łazienki Museum	<p>The Museum has a Collection Protection Plan put in place in case of emergencies.  In the event of an emergency, movable objects (paintings, furniture) will be evacuated to storerooms located on the premises of the Museum. In the first place, objects belonging to the Royal Collection will be evacuated. Sculptures, due to their size, will be protected at their display locations.  Fixed wooden elements, e.g. boiserie and decorative panels will be disassembled. Other fixed elements will be protected on site.  Regulations applicable to the protection of the collections:</p> <ul style="list-style-type: none"> <li>- The Royal Łazienki Museum Security Plan (<i>Plan Ochrony Muzeum Łazienku Królewskie</i>) (2014)</li> <li>- Historic Monuments Security Plan (<i>Plan Ochrony Zabytków</i>) (2006)</li> <li>- Fire Safety Manual (<i>Instrukcja Bezpieczeństwa Pożarowego</i>) (2013)</li> <li>- Manual for Preparing Evacuation of Museum Collections (<i>Instrukcja Przygotowania Zbiorów Muzeum do Ewakuacji</i>) (2015)</li> </ul> <p>The Manual for Preparing Evacuation of Museum Collections specifies the tasks and duties of the Museum staff in the event of a fire threat. It defines the rules for conducting a safe and efficient evacuation and provides places for evacuated items.</p>
Historic Royal Palaces	<p>Hampton Court Palace has a priority list for collections. This details the collection items which should be removed first if time is limited. The palace has a salvage team of 14 members. They are volunteers living in or close to the palace and they practice one evening every month. They also practice with the local fire service. There are numerous storage locations and HRP has arrangements for providing temporary accommodation for collections items.</p>
Parques de Sintra Monte da Lua, S. A	<p>Within different stages of development, considering their specificities and complexity, all National Palaces of Sintra (PNS), Queluz (PNQ) and Pena (PNP) have emergency plans and list of evacuation priorities. In case of an emergency evacuation, the locations where the object shall be placed are set. We do not have temporary storages for evacuated items.</p>

Museum of King Jan III's Palace at Wilanow	Is there an emergency plan to safeguard the collections? Yes. Do you have a safeguarding priority strategy (have you considered sacrificing parts to save others)? We can't call them sacrifices, there are just priorities. The first priority is to rescue people, anyway. Do you make a distinction in your treatment of fixed decorative elements and movable items? It depends on assessment after the fire-fighting action. Do you have temporary storage locations for evacuated items? Yes.
The Peterhof State Museum-Reserve	There is a plan of action and measures in case of emergency situations in the Museum, including priority lists for the evacuation of Museum objects. Each collection's curator has lists of three different value categories of objects. On the territory of the Museum there are several buildings, intended for evacuated objects.
Venaria Reale	All the art work items conserved inside the Reggia are insured for all the risks, fire included and every device exhibition (tents, platforms, showcases) is compulsorily realized in Bs1d0 European fire classification.

Individuals (visitors and non-dedicated staff): What are your evacuation and protection strategies for the public and for personnel? How do you deal with the issue of disabled visitors in an emergency?

Schönbrunn	<p><u>What are your evacuation and protection strategies for the public and for personnel?</u></p> <ul style="list-style-type: none"> <li>- Loudspeaker announcements in German and English</li> <li>- Guides / surveillance staff of Schönbrunn will bring the individual visitors to the nearest (emergency) exits and to defined assembly points.</li> <li>- Licensed Austrian Guides will do the same with their group, bringing them out by the nearest exit and to the defined assembly point.</li> </ul> <p><u>How do you deal with the issue of disabled visitors in an emergency?</u></p> <p>Blind persons: Usually visit the palace within a guided group, so the guide will make sure to get those persons out safely.</p> <p>Physically impaired persons: In accordance with the fire brigade we defined 4 special evacuation points on the first floor that are checked by the fire brigade in order to evacuate those persons from there to the ground floor. Also the licensed guides are instructed with these points.</p>
SPSG (Potsdam)	<ul style="list-style-type: none"> <li>- visitors and personnel have to follow the instructions of authorised staff</li> <li>- security plans are attached on selected positions (not on a current status everywhere)</li> <li>- emergency exits are marked with signs and emergency lighting</li> <li>- we also have very seldom inspections in our internal offices where the staff is briefed (location of emergency exits, fire extinguisher etc.)</li> <li>- our staff is instructed to help disabled visitors in case of emergency</li> <li>- but: we do not have any elaborate strategies yet</li> </ul>
Palace of Compiègne	In the case of fire, the evacuation of the public should take place through the park (most of the museum spaces open onto the park). Evacuation circuits are marked on the firefighter's fire safety plan and 7 refuge areas were designated in 2014.
Palais princier de Monaco	<p>Our hostesses are trained every year in the evacuation of the public and management of the first signs of a fire. They are all able to communicate in several languages with visitors and they are trained in the use of fire extinguishers.</p> <p>Exercises are quite rare: It has been 7 or 8 years since the last staff evacuation exercise, when the alarm was not heard by one member of staff who was in the</p>

	<p>safe at the time.</p> <p>The building is not adapted for the circulation of unaccompanied persons with reduced mobility. They must be evacuated by their attendant.</p>
Paleis Het Loo Apeldoorn, Netherlands	<p>Visitors first and if safety permits the collection.</p> <p>Disabled Visitors, there is a special team to help them. We have evacuation mattresses.</p>
The Royal Łazienki Museum	<p>The entire personnel of the Museum is trained in terms of evacuation of visitors, including disabled individuals. Those with reduced mobility are to be evacuated in the first place.</p> <p>In addition, visitors' assistants and guards receive additional training in this respect.</p> <p>The Fire Safety Manual provides a detailed description of the tasks and duties of the Museum employees in the event of a fire emergency. It specifies the rules for conducting a safe and efficient evacuation and provides places for evacuated items.</p>
Historic Royal Palaces	<p>The evacuation procedure for staff is very complex. The visitor routes are divided into zones and State Apartment Warders are detailed to clear each zone in succession using a 'buddy system'. If there are insufficient warders present then the management must close individual routes to the public. We limit the number of wheelchair users on the upper floors of the palace and we have a phased evacuation strategy for disabled visitors. In the first phase wheelchair users and others who may require assistance are escorted to refuge areas. Phase two is the horizontal evacuation from the compartment of fire, into an adjacent compartment. Phase three, if necessary, is the full evacuation using Evac+Chair devices.</p>
Parques de Sintra Monte da Lua, S. A	<p>The direction is still working on those issues, but we do have evacuation plans for visitors and staff. In recent years much has been done concerning conditions accessibilities for disabled visitors, therefore it would be easier to evacuate them in case of emergency.</p>
Museum of King Jan III's Palace at Wilanow	<p>What are your evacuation and protection strategies for the public and for personnel? In case of fire they have to leave the buildings not caring about the collection. How do you deal with the issue of disabled visitors in an emergency? Disabled visitors are visiting the palace ground floor only.</p>
The Peterhof State Museum- Reserve	<p>Museum objects have zones for fire protection, including informational posters with visitors' evacuation plans. Museum custodians are required to facilitate the timely evacuation of visitors.</p> <p>In new exposition areas disabled visitors have all the necessary features for emergency evacuation. In old exhibition areas there are certain limitations.</p>
Venaria Reale	<p>The emergency team (external company) is dedicated to fire and first aid problems and evacuation of the public while for the offices and not museum-dedicated rooms the emergency team is internal as above described. Special training and specific procedures are forecasted and dedicated for different disabilities, but a lack in the equipment (i.e. stair evacuation chair and/or movable ramps) must be mentioned.</p>

Legislation: Who owns the intellectual property rights to your fire prevention system? What is your country's fire legislation like? To what extent are the regulations appropriate for your institution? Are you eligible for any exemptions? Can regulations necessitate alterations to the building?

Schönbrunn	<p><u>Legislation: Who owns the intellectual property rights to your fire prevention system?</u>  The Schloß Schönbrunn Kultur- und Betriebsges.m.b.H. has bought the and therefor paid for the system.</p> <p><u>What is your country's fire legislation like?</u>  In Austria fire legislation is not applicable for historical buildings, only in case of new buildings or rebuilding measures. So the main building of Schönbrunn Palace is legally not concerned nevertheless the SKB has voluntarily invested in a bundle of measures of preventive fire protection in order to keep the rules of the technical guidelines. Measures are the creation of fire compartments, the institution of a 24h security control center, the implementation of smoke and heat extractor systems, the use of solely heavy flammable materials, etc.)  New buildings (like the 'Apothecaries' Wing (= event location) or the new Visitor center) in contrast have already been built or reconstructed according to these rules.</p>
SPSG (Potsdam)	<ul style="list-style-type: none"> <li>- preventive measures must correspond to fire protection regulations (building legislation)</li> <li>- the planning and realization is a long process, different groups of persons are involved: legislation, fire brigade, conservators, restorers, engineer for fire protection, architect, structural engineer, castellan / occupant</li> <li>- during the process the members of the planning team are confronted with difficult discussions considering conservative compulsions and regulations by law</li> <li>- exemptions are possible but only by the authorities' permission</li> <li>- individual solutions are possible if they correspond to the regulations and / or to the authorities' permission</li> <li>- according to the building's use (e.g. Palace theatre, New Palace) regulations can necessitate alterations to the building, otherwise the authorities are permitted to prohibit the use</li> </ul>
Palace of Compiègne	<p>For the palace it is the <i>Safety regulation to counter the risks of fire and panic in establishments open to the public (EOPs)</i>, approved by the decree of 25 June 1980 and completed by the special arrangements concerning 1<sup>st</sup> and 4<sup>th</sup> category, types J and Y EOPs (the Palace is a category 3, type Y EOP).</p> <p>NB: this regulation is not retroactive; the palace has not undergone any repair or structural work since 1980 and is thus subject to the previous regulation approved by decree on 23 March 1965.</p> <p>Fire safety regulations cannot be the reason for transformation to a building (unlike regulations regarding accessibility for example), it is the other way around: if alterations are carried out, then one must make sure that existing regulations are met. Moreover, the palace is classified as a historical monument and can therefore benefit from some exemptions, in accordance with the safety commission.</p>
Paleis Het Loo Apeldoorn	<p>The state. There is a building act 2012. Regulations may require adjustment to the building.</p>
The Royal Łazienki Museum	<p>In Poland museums are subject to general safety regulations. There are no special regulations or exemptions for historic monuments.</p>

Historic Royal Palaces	Intellectual property rights of all Historic Royal Palaces (HRP) policies and procedures belongs to HRP. This is written in the staff contract. HRP must follow legal requirements, but because all prosecutions are made in the name of the Crown in the United Kingdom, HRP cannot technically be prosecuted for breaches of fire legislation (the Crown cannot prosecute the Crown). Instead the regulator for fire in Crown premises, may levy a Censure against the organisation. HRP must also follow conservation legislation, and so a negotiation is required to balance modifications necessary for fire safety against the protection of historic buildings.
Parques de Sintra Monte da Lua, S. A	Currently the legislation is supervised by ANPC (National Authority for Civil Protection) and meets the requirements imposed by the European Union, in particular the Decisions of the Commission of the European Communities n.º 2000/147/EC, 2000/367/EC, 2003/629/EC and 2003/632/EC. The legislation does not refer to heritage buildings; it only refers to spaces where cultural heritage pieces are exhibited, including museums, archives and libraries. Some articles of the Portuguese Museums Law (nº. 47/2004) are dedicated to this subject. This law requires that the Portuguese Museums must have the necessary security conditions to ensure the protection and integrity of their collections, visitors, workers and facilities.
Museum of King Jan III's Palace at Wilanow	<u>Who owns the intellectual property rights to your fire prevention system? What is your country's fire legislation like? To what extent are the regulations appropriate for your institution? Fire legislation cares about people first. Are you eligible for any exemptions? In some cases. Can regulations necessitate alterations to the building? In some cases.</u>
The Peterhof State Museum-Reserve	The actions of the Peterhof State Museum-Reserve in relation to the cultural heritage are governed by legislation and controlled by the State Committee for the Monuments Protection. There are some issues, difficult to solve, regulated by the fire codes and requirements for the protection of cultural heritage.
Palais princier de Monaco	<u>Legislation:</u> Identical to French legislation Are you eligible for any exemptions? Yes. Can regulations warrant transformation of the building? Yes, for example, the installation of dry risers required alteration to the building.
Venaria Reale	FIAT Engineering and Regione Piemonte are the intellectual owners. The fire detection/alarm system consists entirely of equipment recommended by firms specialised in fire detection and it is installed according to the Fire Brigade Standards and to regulatory standards in force (i.e. UNI 9795, UNI EN 54, etc.). The fire rating of the activities carried out in the Complex of the Reggia of Venaria Reale is classified with as HIGH according to Ministerial Decree 10/III/1998, annex IX, par. 9.3, letter a), as well as for every kind of schools The Complex has received Fire Prevention Certification (CPI), Certificate no. 13435 of 22.10.2007, valid since 18.01.2018, issued by the Provincial Command of the Turin Fire Brigade. The last inspection report by the Fire Brigade is dated 15 June 2014. Notwithstanding the current legislation, alteration of the buildings can be avoided.

Emergency communication: What are your communication and information strategies in case of an emergency and after any damage?

Schönbrunn	We have a manual dealing with “what to do in a crisis” tackling all topics from informing relevant persons, the setting up of an emergency task force, information of the DLT, etc. Several practices have already been carried out for training purposes.
SPSG (Potsdam)	<p>- Depending on the degree of damage we do not inform (very minor things), we inform the visitor on place (visible but not dramatic damages) or we inform the public via press information (severe damages or cases, we need publicity to prevent of continuation or imitation of sabotage)</p> <p>- In principle the staff is instructed not to give interviews without the press office being involved (...)</p> <p>- In case there is an emergency on a weekend there is a list of telephone numbers of important staff in the security headquarter and there are three members of staff, who act as “director on duty”, meaning, that one of these three people is always online on a weekend and has the rights of a director for decisions to be made.</p>
Paleis Het Loo Apeldoorn	Communications Department informs in consultation with the crisis team
Palais princier de Monaco	<u>Emergency communication:</u> Alarm bell and a person checking the building.
Palace of Compiègne	A strategy still needs to be defined, in agreement with the competent ministry.
The Royal Łazienki Museum	<p>In case of an emergency (fire threat), the Fire Alarm System is automatically activated. It is a two-level system, which functions day and night.</p> <p>First Stage Alarm – a fire detected by a sensor activates the first-stage alarm in the Fire Alarm Control Panel. The Museum Security checks the emergency within two minutes. Exceeding this time results in the activation of the Second Stage Alarm.</p> <p>Second Stage Alarm – the activation of the Second Stage Alarm results in transmitting the signal from the Fire Alarm Control Panel to the State Fire Service. Additionally, the Fire Alarm System is equipped with sirens.</p> <p>The Fire Alarm System of the Royal Łazienki Museum includes inter alia:</p> <ul style="list-style-type: none"> <li>- 760 smoke sensors</li> <li>- 74 manual call points</li> <li>- 23 sirens</li> </ul> <p>The Palace on the Isle, the most visited location, is equipped with a Voice Alarm System, while in the Royal Theatre an advanced high pressure water mist system and the VESDA (Very Early Smoke Detection Apparatus) (air is aspirated through a network of PCV pipes and then analysed) system of early smoke detection will be installed.</p> <p>In order to ensure uninterrupted operation of the security systems, the Museum utilizes electric power generators as alternative sources of electric power.</p>
Historic Royal Palaces	HRP has a Major Incident Plan which sets out the structure for internal and external communications. The Press Office has attended crisis media training, and senior management are also briefed in crisis communications.
Parques de Sintra Monte da Lua, S. A.	In case of emergency, the three Palaces are both automatically directed to the nearest fire department of each building and to the Parques de Sintra security center, located in the Pena Palace, where all fire detection systems are centralized. In addition, for the Sintra parks, there is a protocol of cooperation



	between Parques de Sintra – Monte da Lua and Almoçageme’s fire department, that during the summer, provide a watch on the ground, using vehicles circulating in the parks.
Museum of King Jan III’s Palace at Wilanow	We are working on it.
The Peterhof State Museum-Reserve	The fire alarm signal in the shortest possible time passes to the Museum security control systems and at the same time to the town fire brigade.

3) **What are your main challenges today** in the development of a security plan and / or in the implementation of any actions? What are your constraints (human, financial, administrative, etc.)?

Schönbrunn	<p>How to sensibly ‘hide’ technical equipment necessary for security reasons in historical ambiance.</p> <p>To find out about hidden shafts and corridors not known and therefore not documented where a fire could find its way.</p> <p>How to limit possible false alarms due to technical problems (insects, etc.).</p> <p>How to deal with limited personal / financial resources (no team available during night, except security control center). But the professional fire brigade is in Schönbrunn within 3 – 5 minutes.</p>
SPSG (Potsdam)	<ul style="list-style-type: none"> <li>- According to a permanent lack of financial means in recent times many castles have severe deficits. Now we take a lot of effort to bring back the buildings on a better standard. The implementations are financed by the “Masterplan” (a financially supported program by the German government)</li> <li>- Step by step we also develop new security plans in our buildings</li> <li>- We have to improve our deficits, especially in: <ul style="list-style-type: none"> <li>o exercising the staff (training in moving works of art)</li> <li>o preparing emergency plans to safeguard the collections</li> <li>o administrative and organizational manners</li> <li>o keeping up with constructional and technical implementations</li> </ul> </li> </ul>
Palace of Compiègne	Lack of time, staff and funds
Paleis Het Loo Apeldoorn	<p>Adaptation of building construction</p> <p>Properly and adequately trained staff</p> <p>There are no restrictions</p>
The Royal Łazienki Museum	<p>Main tasks:</p> <ol style="list-style-type: none"> <li>1. Replacing traditional dry powder and carbon dioxide extinguishers in display rooms with advanced water mist extinguishers, which allow minimizing damage caused when extinguishing a fire.</li> <li>2. Separating historic monuments from the general provisions regarding fire safety. New legislative solutions for monuments.</li> </ol>
Parques de Sintra Monte da Lua, S. A.	<p>The adaptation of detections and fire fighting systems in historical palaces and buildings is a major challenge. The implementation of preventive measures is something that must be done regularly, including trainings (e.g., use of fire extinguishers) both for the internal staff and for the fire-fighters, that must be familiar with the spaces and the evacuation issues.</p> <p>Also, it would be important to test our security plans by doing regular exercises,</p>

	so that all the operationals involved could know how to respond in case of emergencies. According to the Portuguese Museum law all the security plans must be reviewed every five years.
Museum of King Jan III's Palace at Wilanow	The most difficult challenge is quick and fluent communication and information during and after the action.
Historic Royal Palaces	Although HRP is very pro-active in fire safety management, new challenges always arise and there is always more that can be done. Our main challenge today is how we can best work with the fire service to ensure damage to the historic buildings and collections is minimised. Life safety is important, but so is the protection of historic and cultural treasures. We are also reviewing the provision of automatic fire fighting equipment in high risk areas such as kitchens and plant rooms.
The Peterhof State Museum-Reserve	The strategy development plan includes installation of fire protection systems in all the buildings of the Museum, not only the museum expositions, but technical buildings will be equipped with the same systems.
Venaria Reale	By chance, just in this period the HSE manager is going to revisit the internal safety team and its equipment, taking into account that offices (and similar) are classified LOW in the fire rating. A portfolio for safety activities should be directly held by HSE office.
Palais princier de Monaco	The palace is a special case because it is a heritage site that receives visitors in one part (EOP), the residence of the Head of State and his family, and a place of work for many civil servants. We must not forget that there are archives on site, an IT department and workshops where people work sometimes with gas cylinders. Because of the private nature of certain wings, the fire brigade does not have the plans of the entire palace (with designation of rooms) for an eventual 'Listed Building' intervention. It would be advisable to organise more fire drills for our staff.

#### IV. Other topics discussed during the meeting

**A) Different issues if the palace is still inhabited (used) or uninhabited by royal families. Is the procedure of the intervention the same as when there is no royal family living in the palace? How do you manage the access of firemen in politically sensitive areas?**

**P. Chennel:** At the Royal Palace of Stockholm, when there is a fire we do not call the fire brigade; the alarm goes directly to the fire brigade which comes to the palace within 5 minutes. The palace guard show to the brigade how to get to the place where the fire alarm has gone off. The most important thing is to extinguish the fire and the rest is secondary.

**T. Blanchy:** The situation in the Prince's Palace of Monaco is the same. We have a guard of carabineer who are in contact with the firemen (connected with cameras and hotlines). The firemen are able to arrive very quickly. Then there are no real differences in sense that the palace is divided into different sections. Depending on the affected area, the royal family is evacuated or not. The most important thing is to extinguish the fire and evacuate people.

**B) Intervention in the case of permanent/fixed decoration**

**Y. Carlier:** Do you imagine that it would be possible to break some walls to avoid the fire in your palaces? For example in Fontainebleau, we considered that the most important building to be saved was the *Galerie Francois Ier* with a 16<sup>th</sup> century fresco. In order to save this gallery, we allowed the fireman to break the roof if necessary. It was something completely new for them because there are always architects or curators telling them to save everything and we gave them the opposite, that is

to say the possibility to break the roof and to try to protect the gallery itself. Do you have similar considerations in your palaces?

**S. Wittwer:** When discussing the fixed decorations on the walls, I just wandered at which moment we should break the wall. What could tell us that it is the very last moment? Who can really take the responsibility? Should we wait until the very last moment?

**C. Schindler:** I think that the last responsibility lies with the managing director. However, we just cannot plan it. Schönbrunn is not as big as Versailles; however we have 40 rooms and we cannot say which room is the most precious one since we have so many precious items and objects of art in it. I think you just wait until it happens and you just decide what the last chance you have is.

**T. Crowdy:** There was a recent fire at the Battersea Art Centre in London which is a Victorian town hall with a beautiful belle époque glass dome. There was a very large hall next to it which had a fire in the attic and which was completely destroyed. The fire service made a decision with the building management to try everything to protect this dome. This included reinforcing the fire doors with bolts, nailing things to the doors to give an extra protection, and mostly creating a curtain of water. That is the typical approach. In terms of removing a roof, it is the traditional way to create a fire break. In London, we have laws that go back to the 12<sup>th</sup> century about removing entire houses to create fire breaks to prevent large fire spread. However, I think that today they would not destroy a property, but they would try to use water first.

### **C) Use of powder and potential damages. Why the powder is dangerous for the works of art?**

**T. Crowdy:** This powder goes everywhere; under the floors, in the ceilings, in appliances. To clean the building after using the powder, you have to take the building apart. The chemical inside the powder has a corrosive effect on the stone - a sandstone, a limestone.

**Y. Carlier :** Another specificity of this powder is that it is also very thin and it goes everywhere, even in the thinnest part of a material. If you do not clean-up a piece of art stained by the powder very carefully, there can be a chemical reaction even ten years later when using another product during a restoration of the piece of art.

**T. Crowdy:** The powder puts out the fire very quickly and effectively. Most of the people who use it at home have insurance, and so when the powder destroys for example their kitchen, the insurance pays a new one. However, it becomes an issue if the powder is used in historical settings. In my experience, the sellers are not worried about the long term preservation of buildings; they are worried about selling the fire extinguishers.

**C. Schindler:** It is forbidden to use powder in all public buildings in Austria; it creates fog and thus it is impossible to see clearly. The possible effect could be a panic among the visitors. Therefore we use only water in Schönbrunn.

Experience in terms of fire departments in historic interiors

**S. Wittwer:** I have a question about what is your experience in terms of fire departments in historic interiors. The Hampton Court has these 4 departments. However, do you cut off tors and put good material in between or how do you make these sections within the historic interiors really fireproof?

**T. Crowdy:** In terms of upgrades we have a range of options. Sometimes it is possible to take a timber panel door, to disassemble the joints and to rebuild it with the addition of a fireboard like for example super lax. Sometimes it is easier to have a bespoke fire door made and to put an original door into storage. However, we are doing an interesting research in England at the moment on whether the doors need to be fire doors and whether a typical historic wooden door would actually give us enough protection against the fire. In some cases, in these very large rooms that we have, it is almost impossible for fire to start in the room and to have enough energy to impact the doors. Thus Historic England and the National Trust are currently carrying out a research including life testing on doors because there is a lot of pressure at the moment to upgrade historic doors. I do not think it is necessary.

#### **D) How to integrate fire equipment in the historical buildings?**

**Y. Carlier:** In France, there is the security commission. They do not tell us what we must have, they say what the law requests and we have to respect it. The hardest part for the architects is to imagine something that is in compliance with the law but that can be adapted to the historical setting. This security commission is very strict and refuses a lot of things. There are also lobbies in the National Assembly or in the Senate which want to introduce new rules for their own benefit. As such we have sometimes not very practical equipment in historical buildings.

**T. Crowdy:** In England, ten years ago the fire authority stopped giving advice. It was very expensive since they had to send every year somebody to check if everything was alright. Since then it is our problem and not theirs. Nowadays we legally must carry a fire risk assessment which we review every year and we decide ourselves what is appropriate. The fire authority comes along maybe ones every two years; they look at the fire risk assessment and make sure that it is still within the spirit of the law. On one hand we are responsible for the risk and on the other hand we have the flexibility to have the self-regulation. However the fire industry (fire extinguishers and fire doors) is also very strong in England. For example we do not want to replace historic doors with modern fire doors in our buildings. When we have carried out tests on fire doors, the members of the fire industry have actually tried to block our access to the research laboratory so that we would not be able to carry out the tests which would prove that their tests are not always valid in historic environment. It is important that there are people in every country responsible for managing historic buildings, that we have a way of talking to government, to lobby the government ourselves and to prevent industry from leading their settings of standards.

**C. Schindler:** In Austria there are strict rules and unfortunately we cannot bargain or negotiate the authorities. As such we are obliged to display all the signs of the fire safety. However, we try to place them on the devices with other useful information (e.g.: numbers of rooms) which we would have to display, in any case. Concerning the doors, we have compartments with fire proof doors and we put the original ones in storage. We try to remodel the fire proof doors the same way so that the visitor cannot really see the difference from the original door. We have to do it for the safety of our visitors.

#### **E. Staff training: regular exercises for staff and/or fire brigades to get experience and training in moving works of art. Recruitment of volunteers.**

**T. Crowdy:** At Historic Royal Palaces, we have four salvage teams which consist of volunteers. They must be over 18, physically able, and they must live near the palace. The residents in palaces are good source of recruitment for us. For example the salvage team of the Tower of London, the famous beefeaters, consists of 24 volunteers living on the site with their families.

However, there is an issue with local residents who are not part of the Historic Royal Palaces salvage team. We have created a separate contract for them because normally we pay the salvage team in attendance of 25 pounds per session. It is not a salary; it covers their expenses. Moreover, we purchase all of the equipment.

The key thing is to find people who have motivation, enthusiasm and want to join the salvage team. All of our salvage teams have waiting lists of people who want to join the teams. We have a rule that if a volunteer misses 3 training sessions in a row, we cross him out of the list. If a volunteer is sick or have a long term injury, we will remove him temporarily. This creates competition to be on the team. The training is interesting; we try to give the members of the salvage teams a mixture of how to keep safe themselves, of what the limits are, of what to do when going to a burning building, how to work with the emergency services, the terminology, and the command structure. However, the majority of the training consists of walking around the palace and looking where the objects are, identifying them, and practicing of carrying them, removing the paintings, picking up the porcelains, etc.

The salvage teams are practicing those activities on a monthly basis and now conservators are separately working in terms of how they would receive the collection items. They are ones that practice wrapping carefully porcelain with bubble wrap and putting it into cases, etc.

As the final point, our salvage team is headed in each palace by its own fire brigade. It was only by the introduction of the briefing operators in the 1960s that we realized that a lot of fire volunteers did not have the right training and so they went from the fire brigades to a salvage team.

**C. Schindler:** The situation is similar at Schönbrunn. The difference is that only the employees of the Schönbrunn Company are allowed to join the damage limitation team. It is vital for us that the team members know the premises, the locality, hidden places, etc. We do not remove people from the team if they do not participate in the meetings. However, we want them to take their work seriously and to be ambitious. A vital part of our education is to visit other palaces in order to get the experience and to see how it works in other places. For many of our team members this is a reward and if they want to participate on the excursions they have to attend 80 percent of the meetings.

**T. Crowdy:** I think it is a good idea to visit other palaces. A lot of work we have done in the last two years is to come to an agreement with the Buckingham palace so that all of Historic Royal Palaces' salvage teams and the Buckingham palace salvage team have the same terminology. The conservators also worked on an agreement because every collection owner has a different way of handling objects. We have now agreed and we have a document which sets the conditions of all the palaces in London on how to look after the collection items. We have also created a policy, that our salvage team will be available to give assistance to any collection owner or museum in the London area. For example, earlier this year we sent our salvage team to the Clandon Park. This authorization means that our salvage teams are legally covered by our insurance. As such, if we send our salvage team to a different site and somebody gets injured, there is a legal uphold of sets and writings. We also have a small contract that we ask other organizations to sign which says that if we damage something, we are not responsible for it. It also prevents small details to come out when dealing afterwards with the insurers.

#### List of good practices

Specific training in Schönbrunn.

The key thing from the Versailles visit is the focus on smoke ventilation from the attic's busses.

The problem with unexploded bombs from the World War II they have in the Prussian palaces. We do not have a big problem with that in London; occasionally we tend to have more modern bombing issues. However, one thing we are not prepare for are the damages caused by vibration of an explosion. I thought it was a fantastic precaution they have in Prussian palaces, that within the 30 minutes they are clearing the palace from the most fragile items and they put them into boxes.

The "compartments for people in rolling chair" in Versailles.

#### Proposals

ARRE could initiate a regular exchange on such important subjects like the fire safety. In a second meeting, we could go deeper into these questions of materials, and to bring materials and discuss it there.

Develop cooperation between royal residences in order to convince the legislators that historic buildings need specific rules.