



Preventive
Conservation
in Historic Houses
and Palace
Museums:
Assessment
Methodologies
and Applications

SilvanaEditoriale

Preventive Conservation in Historic Houses and Palace Museums: Assessment Methodologies and Applications

Conference of the National Museum of the Palace of Versailles (EPV), the Association of European Royal Residences (ARRE), and the Research Centre of the Palace of Versailles (CRCV)

In collaboration with the International Committee for Historic House Museums (DEMHIST), held at the National Museum of the Palace of Versailles and Trianon

From 29th November to 1st December 2017

Conference Proceedings

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Thanks to

Lorenzo Appolonia, Lionel Arzac, Jean-Vincent Bacquart, Wojciech Bagiński, Jérémie Benoît, Marie-Alice Beziaud, Céline Boissiere, Anne Carasso, Élisabeth Caude, Gabrielle Chadie, Thibault Creste, Stefania De Blasi, Elisabetta Brignoli, Hélène Dalifard, Gaël de Guichen, Ariane de Lestrangle, Festese Devarayar, Françoise Feige, Christophe Fouin, Éric Gall, Thomas Garnier, Roberta Genta, Denis Guillemard, Michelle-Agnoko Gunn, l'équipe du Grand Café d'Orléans, Pierre-Xavier Hans, Nicole Jamieson, Thierry Lamouroux, Marie Leimbacher, Nadège Marzanato, Béatrice Messaoudi, Stefan Michalski, Christian Milet, Marya Nawrocka-Teodorczyk, Marco Nervo, Lucie Nicolas-Vullierme, Clotilde Nouailhat, Agnieszka Pawlak, Amaury Percheron, Arnaud Prêtre, Gérard Robaut, Bertrand Rondot, Valériane Rozé, Béatrice Sarrazin, Béatrix Saule, Didier Saulnier, Emma Scheinmaenn, Violaine Solari, Emilie Sonck, Pauline Tronca, Rémi Watiez, Thierry Webley, Sébastien Zimmerman



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Maintenance of the Palace of Versailles' Collections: Present and Future Textile Collections, a Particular Example

Abstract

The National Museum of the Palace of Versailles and Trianon has entrusted for fifteen years a weekly dusting mission of its heritage textiles to a team of eight external contractors, all graduates of a master's degree in conservation. Seats and bed upholstery, tapestries, carpets are thus regularly treated. Besides the dusting, there is also a monitoring of the textiles that can take place thanks to this expert and frequent eye. In addition to the dusting of the work, each member of the team, having the competence and the necessary experience, is able to draft condition reports of the textiles, to establish a diagnosis, to inform the curators in charge of the collection of works that need a curative conservation treatment or restoration by drafting recommendations.

An organisation and a specific methodology have been put in place over the years in close consultation with the Conservation Department and in connection with the Palace Administration.

The use of silk crepe line or of nylon tulle on the seat upholstery to protect it from dust is just one of the examples of the various actions taken at the Palace.

Keywords

Qualified restorers, textile, maintenance, protection, crepe line, tulle, staff awareness, micro-aspiration, preventive conservation, dust.

The fight against the dust in spaces, decors and works is a considerable issue to which the Conservation Department of the Palace of Versailles is confronted to in a more and more acute way: the difficulty is due to the surface of the spaces that need to be maintained, from the quantity to the fragility of the works, to their presentation which the most often is without display cases and sometimes still under plastic covers, the massive attendance of the site, especially on the route of the grand tour, the generalisation of big construction campaigns in the Palace in the context of the master plan and an increasing drier climate that favours the diffusion of the dust from the park.

The objectives are twofold: to ensure the preservation of the objects that the dust by clogging all the surfaces, damages on the long term because of its chemical agents, and to assure the visitor a presentation pleasing to the eye which testifies to a quality daily maintenance. But these two objectives

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are in themselves contradictory: the more frequent the micro-aspiration as to meet these two goals, the more one weakens the object by a too regular friction, even with a professional and controlled gesture.

The management of such a site thus implies to reconcile an extreme frequentation with patrimonial concerns, but this approach of taking into account the environment is, it must be confessed, relatively recent. Many actions have already been taken to manage, for example, the light so as to reconcile reception and circulation of the public, while reducing the light thus preserving fragile fabrics by maintaining a correct level of lighting. In order to proscribe natural light, solutions have been proposed such as the installation of blinds to filter it or even plain silk curtains which must be kept closed. As for the anti-UV filters on the outer window panes, they must be changed regularly.

The too frequent opening of the windows, during the summer period to avoid the discomforts due to the extreme attendance levels results in the important entry of dust (white sand surrounding the Palace), insects and even birds. The building works part of the Master Plan, whose first instalment on the south apartment have precisely for objective to mitigate these risks. However, it must be acknowledged that the various building works carried out in many parts of the Palace, as well as the maintenance of the buildings (electrical installations, heating) and the grounds are another important source of dust for the collections.

A Policy of an Organised Micro-Aspiration

Conscious of this double issue, the Palace quickly realised that the internal staff could not answer these objectives and that it had to entrust this maintenance and monitoring activities to textile restorers whose job would be the micro-aspiration mission. Even the tapestry workshop, absorbed by the upholstery and tapestry tasks, could not assume this role. The maintenance of heritage textiles at the Palace of Versailles began in 2000, at the initiative of Pierre Arizzoli-Clémentel, then director of the museum (1996-2009), to ensure the monitoring and maintenance of collections and to remove progressively the plastic covers that covered the textiles of the pieces of furniture. He wanted to entrust the dusting of the upholstered furniture to specialists able to adopt conservation gestures in regard to old or rewoven fabrics, thus relying on his many years of experience at the Museum of Fabrics of Lyon.

From the beginning, the principle is defined by entrusting the task to a restorer graduated from the Institut Français de Restauration des Œuvres d'Art, the current Institut National du Patrimoine, Department of Restorers, who is assisted by a trained upholsterer. Both intervene every Monday, the closing day at the Palace. Only the collections exhibited on the visitors' circuit are concerned, and only the works from the collections. Some spaces accessible to guided tours can be dusted after checking their use another weekday.

Evolution of the Intervention Framework Since 2000

Practised by a single restorer in 2000, the function is reinforced in 2002 by a second restorer, assisted by a colleague both of them graduated from the IFROA. They keep a weekly rhythm.

From 2006-2007, with the implementation of the new public procurement code, this work is subject to framework agreements whereas previously the interventions were done on an estimate.

An extended team of six qualified restorers wins the contract and forms a Consortium with an authorised representative. In 2009, when the first contract was renewed, the number of restorers was identical and became the Vrinat Consortium. In 2012, a seventh restorer joined the Consortium. The renewal of the contract in 2017 was composed of eight qualified restorers including an authorised representative, which is a privileged spokesperson for the public entity, responsible for technical and administrative relations with the Palace of Versailles. Its main intermediaries are the Fine Art Furniture conservators, notably the general manager and the agents of the Public Contracts Department and the agents of the Reception and Surveillance Department. She acts as a coordinator for the team and organises the implementation of the services. The team guarantees the presence of one to four restorers each Monday depending on the planned operations, except for public holiday Mondays.

The contributors' diploma is a strong requirement be it from the Institut National du Patrimoine and its Department of Restorers (formerly IFROA) or that of the Master of Conservation and Restoration of Cultural Heritage at the Paris I Panthéon-Sorbonne University.

The administrative form of the services has therefore evolved over time: from annual intervention quotes (2000-2006) to a fixed-price contract (May 2007-May 2009, August 2009-August 2012, and August 2012-August 2016, 2nd and 3rd contract, Vrinat Consortium). From March 2017, the fourth contract combines two formulas, a flat fee and an order form, in order to gain flexibility and meet the increased requirements of spaces to intervene.

Contracts have also evolved with the evolution of museography and the considerable increase in attendance. Micro-aspiration is not the only intervention. The task is also accompanied by monitoring and an alert role on the state of the textile collections, more generally an exchange mission in terms of preventive conservation. These aspects are materialised through contacts with the Conservation Department, a dialogue and the delivery of documents, appraisals and reports.

The geographical perimeter also varied for twenty years in accordance with, it must be admitted, the financial means allocated to contracts. From 2000 to 2006, the places concerned are the State and Private Apartments of the King and Queen, the Apartments of the Dauphin and the Dauphine, the Apartments of Mesdames, the Apartments of Mme de Pompadour, the Apartments of Napoleon at the Grand Trianon and the Apartments of Marie-Antoinette at the Petit Trianon.

During the following period, it was requested to monitor by level: on the ground floor, the Apartments of Mesdames, of the Dauphin, of the Dauphine, of the Queen and the Halls of the First Empire; on the first floor, the King and Queen's State Apartments, the King's Inner Apartment, the King and Queen's Inner Cabinets as well as the Battles Gallery on the second floor, the Queen's Private Cabinets and the Attics. The Crusades rooms are also included in this requested perimeter, seventeenth-century rooms as well as the Apartments of Madame de Pompadour, Madame Du Barry and Maurepas along with the Grand and Petit Trianon. Some latitude is left depending on the urgencies.

From 2009 to 2012, the perimeter is identical but increases with the works entered in the collections and the refurbishment of the Petit Trianon. The next round, for budgetary reasons, limits the perimeter to the spaces of the King's and Queen's Inner and Grand Apartments. The 2017 contract chooses to widen the perimeter and proposes a rotation on all the spaces open to visits – big circuits and conference visits –, to the Palace as well as the Trianons. The mandatory number of passes is predefined per space. But the finding of dust causes to decide additional passages.

In terms of intervention days, the work in 2003 required 48 days, in 2007-2009 it goes up to 102 days and drops down to 90 days during the following 2009-2012 period. The 2017 contract has 81 days on the flat-fee portion plus all the punctual interventions on order forms.

Characteristics of the Current Contract

In 2017 a new contract was awarded and the Vrinat Consortium with an additional restorer has, once again, won the tender, thus making it possible, thanks to its presence over several years, to have a vision of a long-term evolution. The aim of the 2017 contract is to take advantage of the previous appraisals and to include all the visitable areas according to a predefined rotation which enters into the flat-fee portion. This work plan makes it possible to ensure passages per year, ranging from 53 for some spaces of the State apartment to two or three for apartments accessible for guided tours. The Grand and the Petit Trianon are included in this process. In addition to this flat-fee portion, a part of the contract is placed under the purchase order regime to adapt to the needs. This modulation allows dealing with emergencies and excessive dust. Regular meetings between the Conservation Department and the Consortium help refine a strategy that benefits from the long-term experience and annual reports. These appraisals are now annual and no longer on contract and several documents accompany them – observation reports on the state of the collections and recommendations for preventive conservation: transmission of reports of textile tears, the beginning of an infestation or the renewal of poses of protective silk or tulle.

For the first time, the contract is tackling heavy micro-aspiration projects, including beds, imperials, bed curtains and draperies, on the basis



Fig. 1 to 3
 Examples of furniture/
 textile elements present in
 the Palace's collections
 (© Vrinat Consortium).



of an annual intervention, which requires a complex implementation, due to constraints related to work at height. The restorers have their own scaffolding which they assemble and dismantle. Restitution textiles are also concerned. In addition, the training of assembly and scaffolding work followed by the conservators' Consortium, now allows them to dust the upper parts of the beds, the tapestries, the curtains and the wall hangings (fig. 9). Finally, due to the lack of other possible contributors, the velvet Louis-Philippe banquettes used by visitors are currently integrated.



Fig. 4
Detail of the Queen's imperial chamber while being dusted (© Vrinat Consortium).



Fig. 5
Tests for the protection of fragile fabrics with a crepeline or a tulle cover (© Vrinat Consortium).

Missions: Dusting, Textile Monitoring and Follow Up and Preventive Conservation

The team of restorers' mission for this contract of maintenance of the textile collections includes all of the Palace's rooms where the textiles are preserved. To which the Trianon-sous-Bois wing has been added. The corpus of textile elements to take into consideration is made up of bed quilts and bed curtains, fire screens and screens, armchair upholstery, chairs, sofas, folding seats as well as Savonnerie carpets and tapestries (figg. 1 to 3). These may be original fabrics but most textiles upholstering original furniture are antique reweaves or modern museum reconstitutions. The analysis of their aesthetic, heritage and financial value leads us to take them into account as if they were antic historical textiles.

A routine dusting of all the fabrics without prior observation of the conservation and dust state may cause damage. It seemed imperative to adapt not only the frequency of the passages but also the dusting equipment, depending on the different furniture textiles and their state of conservation: fashioned silks, velvets, wool carpets, tapestries... in volume, suspended, flat... (fig. 4). For this purpose, professional vacuum cleaners equipped with power VSD and HEPA filters (absolute filtration), as well as accessories adapted to each type of object, according to their state of degradation and their possible restorations are used. The nature of the dust, fine particles in suspension or long fibres conveyed by visitors, is also taken into account in the choice of dust collection equipment.

Since 2000, it has been possible to establish an ideal passage rhythm thanks to the team's experience, – if some spaces become quickly dusty, others are much less so. This variation depends on the attendance of public places, scheduled events in three different locations (exhibitions, building work, film shoots...). Dust also depends on airflows and more or less well respected preventive conservation measures (door and/or window closing, wearing overshoes when passing on carpets, keeping the public at bay, use

	Tulle de nylon	Crêpeline de soie
Protection contre la poussière	-	+
Protection contre les frottements	-	+
Discrétion	+	-
Résistance du matériau	+	-
Facilité d'époussetage	+	-

Fig. 6
Summary table of performed tests (© Vrinat Consortium).

Fig. 7
Footprints on the Mercure Salon platform (© Vrinat Consortium).



of the floor polisher...) (fig. 7). The delicateness of the textiles also determines the frequency of the passages. As an example, the most dusted areas are (unsurprisingly) the Hall of Mirrors, the Grand Couvert, the King's State Apartment... Conversely, other spaces are only covered by an annual passage like the Midi and North Attics which are little open to the public so less dusty, the same applies to interventions requiring scaffolding such as the imperial ones,

the top of the bed curtains and tapestries.

The expertise and regular Consortium work with the exhibited textile collections made it possible to develop a council mission in preventive conservation. That is how any observations of deteriorations to a textile or poor storage conditions are gradually reported directly to the Conservation Department. Some installation advice may help to reduce the factors that favour the dust on works. Just by raising the tapestries to protect the bottom edges and protecting the edges of all the carpets with wooden structures, which are a kind of stand or an inclined plane that allows to raise the edge on the public side, thus limiting dust deposits during the passage of the broom, wax deposits and dissuading visitors or guides to set foot there is enough.

Another preventive action to limit the aggression of dust on very valuable textiles which are historical of great value or already badly damaged is the implementation of silk crepelines¹ on seat upholstery to protect them from the dust thus replacing the plastic films that were used until then at the Palace. The contract established in 2010 and once again awarded in June 2014 for a planned period until 2018 provides a framework for these

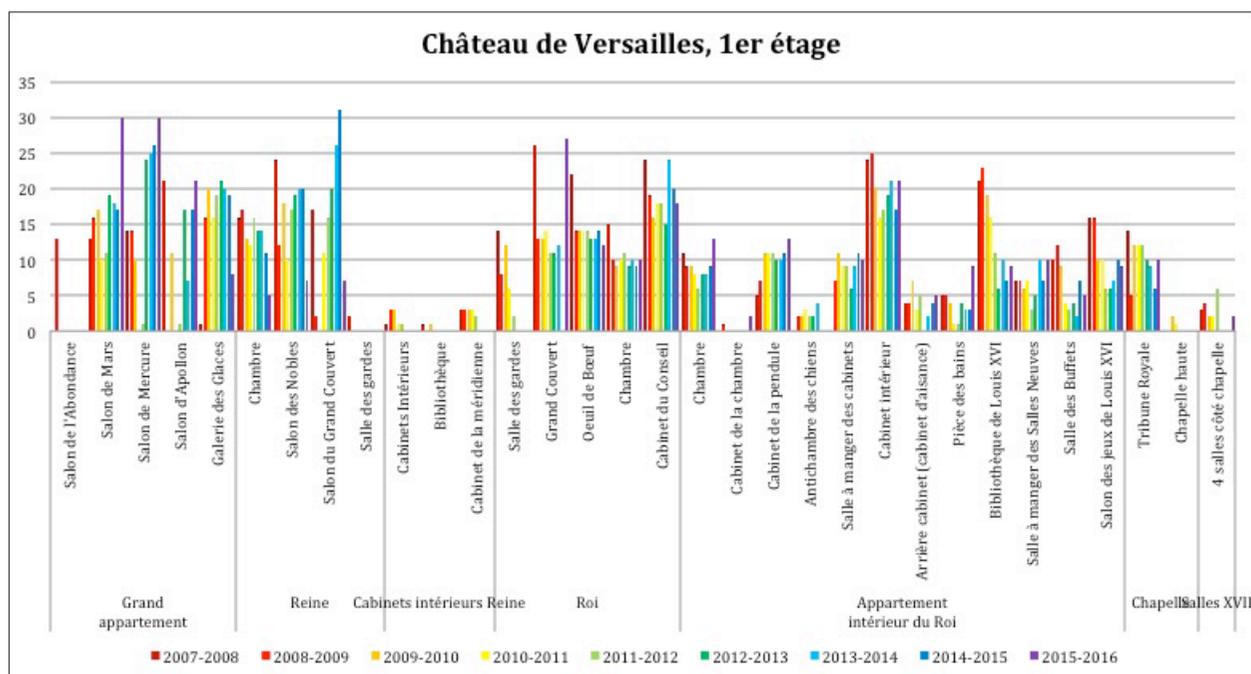


Fig. 8
Diagram showing the number of passages per space (© Vrinat Consortium).

interventions. The durability of the mission makes it possible to judge over several years the relevance of this treatment in the medium and the long term. Three months of tests were carried out in 2013 by placing a tulle² and a crepeline on folding seats in the Apollo salon, along the visitors' circuit (fig. 5). In conclusion, it has been determined that silk crepeline protects the textile from an important amount of dust, even if it covers it up more. It seems more appropriate for furniture dusted episodically. The tulle, on the other hand, lets in more dust, but is more discreet, especially for horizontal surfaces, and makes dusting easier. It is, therefore, more suitable in the case of furniture dusted regularly (fig. 6).

To combat insect and mite infestations, extensive dusting is recommended two or three times a year as is the monitoring of suspected pieces. Traps are laid against rodents. Advice is also given concerning the handling and movement of works because deteriorations are regularly found on the Palaces' textile works: snags, worn or torn tapestries and trimmings, footprints or stains on the carpets or on the upholstery. It sometimes happens that the conservators' Consortium is requested for dust removal before the closure or the reopening of certain spaces, particularly in connection with the works of the Master Plan.

It is desirable to train personnel in the handling of textiles, particularly large formats, with the systems facilitating the removal and hanging, among others, of tapestries and their packaging flat or rolled without forming folds or tensions... The staff must be aware of the heritage value of the textiles.

Since the creation of the first Consortium in 2007, the objective has

been to establish a fluid communication with the Conservation Department and to promote a certain pragmatic efficiency. In previous contracts, plans were left for the different annotated spaces. These notes (conservation state of the textiles, dust state of a space...) were used to establish diagrams representing dusting frequencies of the different spaces during the years, the periods covering a contract... These graphs then helped to make the needs of the Palace more tangible and to draw up the specifications for the current contract (fig. 8). At the end of each contract and now at the end of the year, a report is given to the Conservation Department using the photographs of the objects for which the team has reported a conservation problem. For these textiles, a quick condition report is established, accompanied by recommendations for the improvement of their conservation conditions or restoration suggestions. These documents are used in the preparation of conservation management tools and budget requests. The most often they result in a restoration (Vrinat *et al.*, 2015, p. 99).

Although it is not the only example in the Palace of collections affected by micro-aspiration campaigns – similar steps are being taken with regard to collections of sculptures or paintings – it is one of the most delicate to put into practice for many reasons. First of all, the specificity of the textile collections requires the expertise, the gesture and the eye of authorised restorers of the textile collections. Secondly, the increasing use of the Palace on Monday for new activities, be they patronage operations, school group visits that started two years ago, film shoots or, even more importantly, political or diplomatic events whose consequent drastic security measures exclude any cohabitation in terms of intervention and imposes on the conservators' consortium a great adaptability. It must also be careful to respect the balance between the work plan defined by the rotation and the additional passages started with purchase orders. All these aspects require a close dialogue with the Conservation Department on the occasion of the regular agenda. And these actions essential for the safeguard of the collections and the quality of their presentation result in a strong financial commitment from the Institution.

Since 2017 vigil rounds have been instituted, they are shared by the art technicians in the Palace's museum workshops and are made in the presence of the Curator general manager of the collections of Furniture and Art Objects. They are organised topographically and their appraisal makes it possible to identify the interventions that need planning in each workshop (cabinet making, gilding, tapestry) and their degree of emergency (small interventions to plan, urgent interventions or restorations).



Fig. 9
The dusting of beds and
imperials with scaffolding
(© Vrinat Consortium).

Each round gives rise to topographic and summary documents (a form par room that records the observations made by each of the workshops and a summary of the actions by workshop and by priority). These documents are used partly to fuel the workshops' programming.

The commitment of the Conservation Department in the EPICO program will allow developing tangible actions, especially during the implementation phase of the program (EPICO II). The conservation assessments carried out with the EPICO method will make it possible to compare the importance of each damage cause – here dustiness – and to concentrate the resources on the priority factors within the framework of the general preventive conservation plan and in support of the scientific and cultural programming of the museum.

Paths of reflection must be opened to make more efficient the micro-aspiration site for textile restorers. The definition of intervention protocols for the companies in charge of the household of free circulation spaces is necessary. The call for volunteers and the gesture training of a few motivated Palace agents should be explored, together with a review of the material available to them.

It would be convenient for the Conservation Department to have a preventive conservation technician who could handle certain types of collections and in the case of textile collections, velvet benches and restored textiles of different heritage value.

In addition, the use of maintenance contracts by type of collections, entrusted to restorers specialised each in their field, must be generalised. In general, an increased awareness among reception and surveillance agents and firefighters of the criteria for conservation and manipulation of architectural elements (door, hardware, etc.) through training provided by the Conservation Department would allow putting the heritage preservation of the collections and their environment at the heart of everyone's concerns.

But it is also in the direction of the public that it is necessary to turn to, by encouraging it through educational actions to take measure of its responsibility regarding the collections it comes to admire: admittedly the public shows an interest in communications and reports devoted to the restoration of works and the construction works done in the museums' backstage, but it must realise that it too is a conservation actor for future generations.

Endnotes

- [1] A sort of transparent silk veil.
- [2] Nylon tulle.

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Cinisello Balsamo, Milan

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Cover

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