Scientific meeting

ARCHAEOLOGY IN ROYAL RESIDENCES

9-10 November 2017

Coudenberg Palace, Brussels, Belgium

Participants

- ARRE, Network of European Royal Residences: Elena ALLIAUDI
- Belgium
  - Institut royal du patrimoine artistique: Sebastiaan GODTS, Laurent FONTAINE
  - Coudenberg Palace: Laetitia CNOCKAERT, Stéphane DEMETER, Aude HENRIQUES DE GRANADA, Vincent HEYMANS, Frédérique HONORÉ
  - Patrimoine à roulettes: Yves HANOSSET
  - Government administration of the Brussels Region: Sylvianne MODRIE
  - Société royale d'archéologie de Bruxelles: Michel FOURNY
  - Université libre de Bruxelles: François BLARY, Paulo CHARRUADAS, Philippe SOSNOWSKA
  - Visit.Brussels: Roel JACOBS
- France, Château de Versailles: Annick HEITZMANN
- Monaco, Palais princier de Monaco: Thomas BLANCHY
- Poland
  - Museum of King Jan III's Palace at Wilanow: Diana ŚWIĘCKA
  - Royal Castle in Warsaw: Agnieszka BOCHEŃSKA, Rafał MROCZEK
- United Kingdom, Historic Royal Palaces: Daniel JACKSON, Alexandra STEVENSON
- Russia, Moscow Kremlin Museums: Sergey ZVEREV

Visits

- Coudenberg Palace
- Remains of the 1st city wall preserved in the Palais des Beaux-Arts in Brussels (BOZAR)
- Remains of the 1st city wall preserved in the buildings of the Belgian film library (Cinematek)
- Archaeological site "Bruxella 1238"
- Archaeological laboratory and depot of the Brussels region

Coudenberg, mediation

by Laetitia Cnockaert and Yves Hanosset.

SITE ARCHÉOLOGIQUE ET MUSÉE
géré par l'asbl Palais de Charles Quint
rue Royale 2-4 à 1000 Bruxelles

info@coudenberg.brussels
www.coudenberg.brussels
T : +32 (0)2 563 61 79

ARCHEOLOGISCHE SITE EN MUSEUM
beheerd door vzw Keizer Karel
Koningsstraat 2-4 te 1000 Brussel

1. Questionnaire

Types of mediation carried out at Coudenberg:

- Museum installations: supports (panels, vitrines…), lighting, specific staging and decor
- Communication: social media, sharing on Facebook
- Publications and scientific: monographs, small brochures, digital resource centre
- Educational activities: guided visits (externalized), activities for families
- One-off activities for the general public: Family Day, Heritage Days, etc.

2. Archaeological digs

The excavation of Coudenberg was carried out during the first wave of city excavations in Brussels. These were partly 'rescue' digs → facadism. The Place Royale and Rue Royale were part of traditional excavation programmes. One dig lead to another until the site as we know it today was made accessible to the public.

Different owners, different excavation teams, different epoques → the communication of data during excavation was very varied (press articles, information panels, etc.)

3. What to say and where

In general, museographical installations are centred around:

- The history of a palace through its architectural history and some reference to sovereigns of the time
- Archaeology (archaeological professions)
- Objects found: themes are defined according to the objects dug up
- How best to deal with the upper floors when we only have wall parts from the lower floors or with the art works that have survived fire and destruction, but are scattered everywhere except for Coudenberg? Soundless screenings, monographs, events (Family Day), temporary exhibitions, timelines, e.g. Life at Court is dealt with incidentally in the museum: saucepans, luxury crockery, etc.

Which periods should be shown? 800 years of history, architectural development, destruction, trasnformation, etc.

The remains of this place of power represent an essential milestone in the identity of Europe. The plurality which has made up our territories since the Middle-Ages is omnipresent at Coudenberg as are the links between national histories that need to be situated in the wider context of European Courts; they are the founding elements of our past and of our memory before Nation-States→ membership of international associations (e.g. ARRE), multilingual content.

4. Museographical installations

3 separate entities make up the archaeological site and the museum:

- The Coudenberg Palace ruins.
- The vestiges of the Hôtel des comtes d'Hoogstraeten, which today houses the permanent and temporary exhibitions of the museum.

- A segment of the rue Isabelle, previously open-aired, which linked the palace to the Hôtel d'Hoogstraeten.

Various installations:

- 1990s: early-stages – only a small part of the site was occasionally accessible to the public
- 2000-2008: the whole site was opened permanently to the public in 2000, with equipment installed mainly for safety and functional purposes. Any superfluous equipment was cleared and the ruins were the main object of the visit and the focal point of interest for visitors.
- 2009-today: new layout inaugurated in 2009, designed to last. There are few restrictive signs limiting pubic access to the ruins. Each architectural unit has its own particular feel.

Equipement installed since 2009:

- Educational panels and 'archaeological numbering'.
- The lighting has been completely redesigned, however, the conservation aspect was not taken into account in the planning stage (growth of moss, heat emitted by spotlights, etc.)
- Audioguide.

The permanent installations are mostly designed for adult visitors, either individually or as part of a guided tour. Over the last few years, a new target audience has become of particular interest to us and that is families with young children:

- Treasure hunt: Discovery circuit with little museum equipment. Families receive a booklet with discovery missions to accomplish and a rucksack. The tasks are designed in total respect of the ruins.
- New technologies: Development of an application with two tour circuits.

5. Discovery Boxes!

Project development

Initial objective: to develop an educational tool to be used independently (without a mediator) for families with children aged around 5-8. Discovery of historical, archaeological and artistic content by other means than the usual traditional guided tour or digital tools → a fun, sensory and user-friendly discovery activity.

Coudenberg's aims: autonomy, flexibility, modularity, mobility, simplicity, intergenerational exchange, easy to manage, etc.

Material constraints: minimal security (theft), mobility (listed spaces), maintenance (limited staff available).

Preliminary study: brainstorming, analysis of our wishes, constraints, etc. Identification of topics to explore. Development of independent activities.

Collaboration with the association *Patrimoine à roulettes*. Regular discussions between project leaders.

- Coudenberg = content
- *Patrimoine à roulettes* = development of educational aspects, realisation of technical and graphic aspects.

Preliminary conclusions

Since March 2017, the boxes have been available during the school holidays and we have been able to draw some conclusions and make some improvements.

Feedback received:

- It takes 3 hours to get through all the boxes, which can be tiring for both parents and children and frustrating for the child if a parent can't finish. Right from the start it became clear that we needed to limit the content. Two possibilities: Reduce the amount of boxes or create several circuits.
- Unequal adult participation depending on child's age, family number and type and the involvement of the accompanying adult.
- Complaints about the level of difficulty/ease. However, there are several activity levels which do actually allow us to target several developmental age groups.
- A lot of freedom given to visitors:
    - No map showing box location
    - No right or wrong direction for the circuit
    - Certain activities do not have a real solution. Each group/visitor finds his own solution.

→ It can help visitors that need some accompaniement to a greater or lesser degree.

→ We try to have a volunteer or an intern available when the Discovery activity is on offer in order to help those who feel 'lost'.

Future expansion:

- This activity will soon be available for school visits.
- Currently under consideration: creation of an 'incentive' type of activity.

Coudenberg, archaeological information sytems and 3D modelling

By Aude Henriques de Granada and Stéphane Déméter.

Project background

Until recently, research and conservation operations were logged in individual documents and stored in different places, according to the subject. A database has now been created In order to centralise all this information, with direct links to documents stored on the ASBL server (operation reports, protocols, observations, photos, etc.), allowing the retrieval of all the relevant documents.

Objectives

The project intends to design a documentary medium for scientific purposes. It will include a three-dimensional HD model and an archaeological information system (AIS).

The three-dimensional model will be designed partly as a multifunctional research and management tool and partly as an interface to access the AIS

The three-dimensional model should facilitate:

- The visualisation of digitised spaces as a whole or by smaller areas.
- Interaction with the virtual space to observe certain spatial aspects, such as the relief, volumes, layout from differnet angles.
- Carrying out scientific studies directly on the model.
- The integration and testing of hypotheses for new research.
- Its use as an interface to access a multitude of varied information stored in the database.
- The design of tools and documentation for mediation purposes.

The AIS, metadatabase should be designed as a multifunctional archiving and management tool which:

- Allows access to a body of data about the site and a variety of media: texts, photographs, maps, illustrations, etc.
- Allows access to archaeological, historical, architectural or technical information connected temporally or spatially to specific elements of the site or the museum.
- Enables us to monitor the preservation condition of the site: condition reports, alterations, repairwork etc.

The strength of the project lies in the links that can be established between the two parts of the project and the use we can make of them.

Both the tools will be used through an interface allowing the user to interact simultaneously with the 3D model and the metadatabase.

Hoards of the Moscow Kremlin, 13^{e}-19^{e} siècles

Par Sergey Zverev.

The archaeology fund of the Moscow Kremlins Museums includes seven archaeological complexes troves found during the archaeological research in the Kremlin. The Museum’s collection includes precious pieces of jewellery, accessories, cult objects and domestic utensils of the Old Russian and pre-Mongolian period. The exhibits, discovered in 1988 and 1991 within two treasure-troves, were hidden in the ground in winter 1238, when Moscow was being besieged and ravaged by the hordes of Batu Khan, the grandson of Genghis Khan.

The silver gilt medallions of barms, which the princes dressed in especially solemn occasions. On two of them the archangels are depicted in full growth, on four - the crossed crosses.
Articles worthy of particular note are the Scandinavian pendants, crafted in the form of a bearded head of a man, which are characteristic of the artistic tradition of the Eastern part of Europe in ancient times.

The coinage of the ancient Rus is represented by pieces of cast metal, mainly silver, formed as ingots — grivnas (grzywnas), which served as a measure of unit of exchange and used as money throughout princedoms of Kievan Rus, such as the principalities of Kiev, Chernigov, and the Novgorod Republic. Each of these silver ingots weighed about 200 g.

A small hoard, consisting of two Byzantine crosses made from the Badakhshan lazurite and rose-tinted marble with gold inlay on the edges.

Such relics were crafted in the Byzantine Empire and later on delivered as precious gifts or goods to different countries and to Rus as well.

Two troves with the Golden Horde's coins deserve a special mention. One of them is the treasure trove with Russian bars and "tartar" coins of the late 14th century.

Found in 1940 during ground works near the Savior's (Spasskaia) Tower.

The other Hoard consists of the Golden Horde's and Crimean coins of the 15th century. Found in 1929-1930 during ground works on the site of Chudov And Voznesensky (Ascension) Monasterias in Moscow Kremlin.

Another rather big coin hoard of the mid-17th century about thirty five thousands (35000) wire coins was found in the gate of the Salvation (Spasskaia) Tower. It contains more than 6000 half-copecks coins and 5800 quarter-copecks.

Two small treasures of copper kopecks in the mid-17th century were found in 1998 during the reconstruction of the Faceted Chamber and in 2006 during the reconstruction of the Chamber of the Treasury.

Management of the archaeological site of the Museum of King Jan III's Palace at Wilanow

Par Diana Święcka

Management of Wilanow's archaological site :

- At our museum – management by objectives
- Multiannual project „Protection of the Wilanow's archaeological site"
- Main goal – to prevent our site from distruction
- Second goal – archaeological resources management

Archaeology at Wilanow :

- Queries : Planning – special application for planning projects
- Excavations
- Registration : Inventory and databases : MONA, and Geographical Information System
- Restoration
- Storage
- Publication, exhibition and the forms of popularization : Facilitating and poplarization : GIS on-line, Publications, Exhibitions, „Marking"/Animations/ reconstruction

Archaeology of the Royal Castle in Warsaw

Par Agnieszka Bocheńska et Rafał Mroczek

Three phases of archaeological research at the Royal Castle in Warsaw

- the 40's to the 60's. Archaeological works carried out during the construction of the W-Z route, one of the main routs of the city running along the southern slope of the castle's foundation and studies in the area of the Castle.
- the 70's and 80's. At this stage the archaeological research accompanied the reconstruction of the Castle and the ordering of its surroundings.
- from 1995 up to the present time, covering archaeological research and supervision accompanying the latest investments, conducted by the Archaeological Department of the Castle.

The purpose of analysis

Comparison of the study group with the EMPOP, MITOMAP and mtDNAmanager databases, and YHRD to reference the results of the study to the population living in Europe today.

Bone materials were collected from 15 individuals. All of them were tested for:

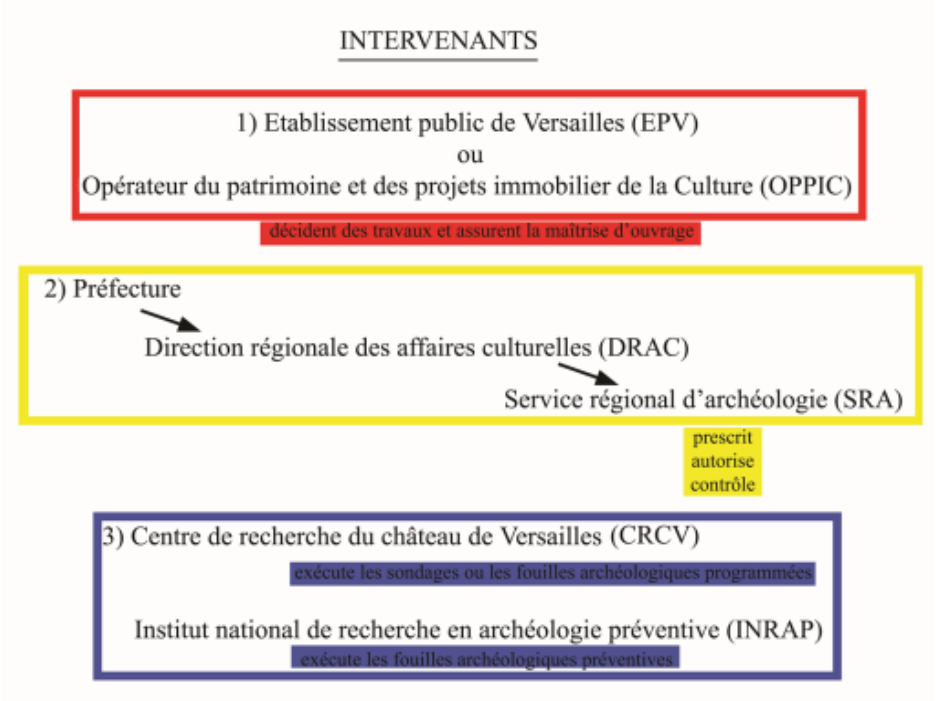
- defining a genetic profile based on autosomal STR markers
- defining a genetic profile based on STR markers localized on chromosome Y with prediction of haplogroup Y
- Identification of the control region sequence (HV1 and HV2) of mitochondrial DNA along with the mtDNA haplogroup prediction.

Area of interest

- Aerial photogrammetry
- Airborne Laser Scanning
- UAV photogrammetry
- Terrestrial laser scanning
- Close-range photogrammetry
- Macrophotography
- Surveying

Versailles, Trianon, Marly: 25 years of royal archaeology

by Annick Heitzmann



Archaeological activities have been implemented at Versailles since the big storm of 1990 which destroyed numerous trees. Restoration of the gardens to their former state at around 1700 (when André Le Nôtre died). This period is considered the most 'perfect' before Jules Hardouin-Mansart's simplifications.

Major operations since then:

- Undertaken by the EPV and CRCV, the regeneration of the Pavillon frais de Trianon (2006-2010)
- Undertaken by the OPPIC and INRAP: The southern terrace and the Cour des princes of the Palace of Versailles (diagnosis: November 2012)
- Undertaken jointly by the INRAP and CRCV: the southern terrace, the Cour des princes and the central body of the Palace of Versailles (surveillance of the work: November 2013 to 2017)
- Programmed excavation at Marly (2013-2015). A mound of earth recalls the main château.

Mediation:

- Participation in national archaeology days
- Some vitrines display objects found in the excavation
- Them-based guided tours
- Partnership with schools
- Temporary exhibition with the Marly museum

For the time being, no real archaeological strategy has been developed by the management of the Palace of Versailles to show the results of the excavation. A project to create a little reception

house near Marly is underway; perhaps the archaeological aspects could be presented there.
The palace management is very interested in GIS projects

Coudenberg's conservation and security strategies

by Aude Henriques de Granada, Sebastiaan Godts and Laurent Fontaine

Conservation and security policy

Main pillars of preventive conservation policy

Conservation policies and those of securing the property and visitors are based on:

- Scientific studies which are indispensable to the development of our knowledge about conservation and enhancement of the site,
- On-site observation. Continuous presence on the site is required to check on the status of the ruins regularly, to analyse visitor behaviour in relation to the heritage and initiate proceedings for investment and work on conservation and safety.

The increase in human resources and the budget allocated to conservation and the enhancement of the ruins by ancillary powers have enabled us over time to develop and diversify research and investment in the domain. Today, two members of the ASBL Palais de Charles Quint, which manages the archaeological site and the museum of Coudenberg, have been entrusted with preventive conservation projects: protocols have been developed, observation organised, in-depth scientific studies have been commissioned to external consultants, internal conservation projects have been realised and work has been programmed in the short, medium and long term. Since 2009, almost €2 million have been invested in research, mediation and safety equipment, and various works.

Main preoccupations

The main issues hindering conservation and enhancement of the site are climate and water infiltration.

In light of their complexity, these two factors are likely to remain at the centre of our preoccupations for a a few more years.
It has taken several years to improve our understanding of the climatic conditions. Over time, the ASBL has acquired more efficient measuring devices, enabling us to perfect our knowledge. Two climatic studies have also been commissioned from the Institut royal du Patrimoine artistique (IRPA) allowing for the professionalisation of the climatic study carried out by the ASBL team.
In the current conditions, too many important factors are preventing us from being able to control climatic conditions and resolving infiltration problems.

The climate: the typography of the site, the presence or not of air-treatment equipment (climatic studies have shown the inefficiency of the equipment in place), the history of the buildings and the entrances.

> Water infiltration is linked to watertightness and the perimeter of concrete slabs that cover the ruins. Access to these areas is complicated: the slabs bear a high-density road and the technique that needs to be implemented is difficult to define. With no surveys, only hypotheses have been developed, based on the plans, with no guarantee of success.

- The different actors on the archaeological site: The Brussels-Capital region and the City of Brussels.
- Problems related to the conservation of the site.

Monuments and monumental decoration lab

- **Problems & Aim**
  1. Climatic conditions causing material deterioration (climate control, underground site, visitor comfort)
  2. Crumbling and powdering of the archaeological remains (fire, exposure, salts, moisture, vibrations, visitors)
  3. Biological growth (deterioration, visitor safety, esthetics)
  4. Water runoff, condensation, smells (underground site, climate conditions, visitor comfort)
  5. Stability of walls and vaults (vibrations, visitor safety)

- **Research Program**
  - Climate monitoring / Environmental impact assessment

    Controlling the climate can be essential for a preventive conservation strategy, which can be defined as an indirect action to increase the life expectancy of the archaeological remains, and by doing so keeping them in a preferred state of conservation to mitigate damage and/or deterioration. Potential risks and possible interventions are outlined to avoid climatic conditions which are in conflict with the requirements for the visitors' comfort while preventing damage phenomena to the materials.

    Recommendations

    Adaptation of the air conditioning system in order to obtain significantly lower fluctuations in relative humidity by:

    1. decreasing the temperature of the blower;
    2. Varying the temperature according to the seasons,
    3. regulate air conditioning based on relative humidity.

  - Mortar analysis, characterization of the building materials / Historical and Compositional information
  - Moisture and salt analysis à Degradation assessment - Salt extraction experiments

    12 experiments in 5 locations (application times between 11 and 56 days). 3 poultice types and 1 humidification experiment. Samples are lifted from brick and mortar to a depth of 20 cm, before and after each experiment to evaluate the efficiency. The experiments have shown that an extraction hardly extract salts but rather diffuses them in the depth ant to lesser salt contaminated areas.
  - Elimination of biological growth à Health (BBRI)
  - Repair/Injection mortars à Stabilization of crumbled materials

    Development of grouting mortars to stabilize fragmented bricks and masonry throughout the site. Preventing further loss due to vibrations (road-tram above) or human interaction

- Consolidation of powdered masonry à Stabilization/ Slowdown of degradation processes
- Vibration and movement measurements à Stability assessment (traffic above the site) (KUL)
- Dissemination!

- **Recap & Achievements**
  - **MANAGEMENT & CONSERVATION STRATEGY**
  - Mortar Composition Related to the Construction Date
  - Determination of Inherent Material Properties
  - Identifying Deterioration Mechanisms
  - Specific Recommendations for Controlling the Climate
  - Identifying Proper Restoration Materials and Methods
  - Increase Life Expectancy of the Archaeological Remains
  - Sharing Knowledge and Lessons Learned with the Field

PRACTICAL ADVICE FOR AN OPTIMAL MANAGEMENT & CONSERVATION STRATEGY BASED ON COMPREHENSIVE SCIENTIFIC RESEARCH

Delicate balance between the requirements for public health/safety and the protection of the archaeological remains from future degradation

Projet BAS – Brussels Archaeological Survey

by François Blary, Philippe Sosnowska and Paulo Charruadas

BAS = historical, architectural and archaeological study of Brussels' cellars (13th-19th centuries)
Areas of investigation:

- Central areas, also known as the UNESCO zone
- One of the former arteries of the city: Steenwegh or la rue Haute (high-street)
- A well-preserved rural area: Anderlecht and a cloistered site: Abbaye de La Cambre

I. Belgian Historiography

II. Written sources, methodology and inventory

1) Approximately 40 information criteria (columns) across several categories:
   - Administrative fields
   - Localisation fields
   - Descriptive fields (topography, coverings, material, equipment)
   - Fields linking back to different archives (living and historical)

2) So far, 750 sites have been identified in the count.

III. Material sources and intervention methodology: prospection, preventive and planned archaeology

IV. Subjects discussed:

a. Functions

b. Types of coverings

Currently out of 664 entries from the examination of all the archives (text or iconographic), we have found 232 cases of documented coverings. These are spread across threee categories:

- planks/boards 5%,
- groin vaults 9% (with or without springers)
- basket-handle arches 86% (with or without springers)

c. Materials and wealth of realisations

d. Reparcelling of property

e. Urban topography and road networks

f. The complex development of these spaces