

# Complex properties management Preventive and planned conservation applied to the Royal Villa and Park in Monza

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## Abstract

**Purpose** – The paper will present the case study of preventive and planned conservation applied to the Royal Villa and Park of Monza, which is one of the pilot projects within the general framework of Monza and Brianza Cultural District. Starting from an in-depth analysis of the Royal Villa, which represents a recent conservation and valorisation intervention developed by both public and private subjects, the purpose of this paper is to define an operative model for the management of complex properties, at communicating good practices for the maintenance of the built heritage and at identifying the priorities for the interventions.

**Design/methodology/approach** – The research project foresaw a first collection of data and information related to the previous conservation activities executed upon the case study, the design of a conservation plan in all its parts (technical handbook, conservation programme, economic budget, user handbook) through an information system dedicated to the conservation of built cultural heritage, and its fulfilment. In the meantime, a context analysis of the Royal Villa and Park of Monza was developed, with a specific attention to the diversified historical buildings located in the park.

**Findings** – The action research carried out has been evaluated in the framework of upstream perspective theories. This enabled to highlight the importance of an integrated approach; of the need of sharing the collection of data in order to set up evidence-based policies; and of the need to enhance the skills of involved professionals and decision makers.

**Originality/value** – A progress in protection measures, the understanding of conservation and valorisation as preventive activities, effectiveness of private business models for maintenance, dissemination of good practices, and creation of a network of local stakeholders.

**Keywords** Cultural heritage management, Local development, Public-private partnership, Complex properties, Conservation plan, Preventive and planned conservation

**Paper type** Case study

## Introduction

A brief introduction of the general framework is required. The case study is relevant as it is part of a broader project, the Monza and Brianza Cultural District (MBCD), which has demonstrated how the creation of networks and the system logics are much more effective than the implementation of a single “traditional” restoration project (Barbetta *et al.*, 2013). The same project has been included in the JPI project CHANGES – Changes in Cultural Heritage Activities: New Goals and Benefits for Economy and Society.

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The MBCD is based on strategic actions, such as creation of synergies between tangible and intangible heritage, preventive and planned conservation (PPC), enhancement and development of cultural and creative activities. The project foresees the involvement of different supply chains, like public bodies, the education field, innovative productive sectors and trade associations. Considering culture as a unifying factor, the aim is the creation of a stable network of cultural and economic systems, in other words synergies between cultural activities and cultural/creative enterprises. This objective is achievable through actions, such as conservation, valorisation and fruition of cultural heritage; implementation of innovative processes in the local economic milieu and training (Della Torre and Moiola, 2012).

It is important to clarify the theoretical context which terms as conservation and valorisation refer to. Conservation and valorisation are defined in the Italian law for the protection of Cultural Heritage (D.Lgs. 42/2004) and further definitions of valorisation have been provided in the vast existing literature. In this paper, valorisation is meant as the “relational dimension of protection” (Petraroia, 2014), that is the relationship between the built cultural heritage (BCH) and its context, both physical and social. Moreover, it is possible to state that valorisation is fully effective when it is based on the stock of knowledge coming from the conservation process.

Besides, PPC, as theorised in the Italian research stream started in 1999[1], is understood as a long-run strategy of integrated management of BCH (Della Torre, 2003a). It foresees the implementation of conservation activities in a “never ending” (circular) process of study and comprehension of the building, prevention of risks, maintenance – meant as monitoring and small repairing – and, if and when necessary, restoration works.

PPC strategy as theorized by Stefano Della Torre in 1999, starting from the Urbani's theories dated back in the 1970s and as developed in 2000s, is based on the need of trying to demonstrate that a holistic and long-term vision is more effective in a logic of sustainability (given that in the Italian context it is also mandatory to comply with the requirements of Italian law for public works). Nevertheless, it has been unavoidable to refer to the international context: Preventive Conservation theories, Conservation Management Plans and Monumentenwacht organisations (Vandesande, 2017). However, over time, some differences became more and more clear. Main discrepancies with the methodology adopted for museums, collections and work of arts on the bases of theories on Preventive Conservation, term which dates back to the early 1980s (Staniforth, 2013), and with the Conservation Management Plan are due to relevant differences in definitions, practices of conservation, role of value assessment, economic approach and legal frameworks (compare Kerr, 2013).

In this specific context, the aims are the management of transformations, preserving material integrity, and the effectiveness of both conservation activity and expenditure for conservation. Furthermore, this approach entails the integration between conservation and valorisation, as defined above, since the knowledge coming from the continuous conservation process is the source for the contents of the valorisation activities (Della Torre, 2010).

PPC is one of the strategic actions within MBCD, which has been structured in different sub-actions: a front office for PPC, training courses on PPC, four restoration projects and two pilot projects focused on PPC (Moioli, 2013). The core action referred to BCH is the implementation of best practices, so the first step has been the selection of pilot projects.

The PPC strategy has been applied in a fair number of case studies, also thanks to a ten-year devoted grant programme provided by Cariplo Foundation[2], and it has been implemented using different methods depending on the site-specific situation. The main operational tool is the Conservation Plan, that is a more complex and complete document than the maintenance plan adopted in the facility sector, even if more specific than the model proposed by Kerr (2013).

The idea of applying PPC as a management tool in a long-term vision is innovative as in the Italian context of public works (conservation of Royal Villa and Park are subjected to

this regulation) only a maintenance plan – not suitable for BCH – is mandatory and only in case of restoration. Thus, the creation of the structure for the conservation plan for all the historic buildings, located in the Park, and the provision of an information system for conservation activities able to dialogue with the property management of the Villa, are two important actions in the direction of:

- planning of conservation activities in order to shift from urgencies to programmed activities;
- controlling costs and investments; and
- evaluating the effectiveness of both conservation activities and costs on the long period.

The case study of the Royal Villa and Park in Monza is interesting from several points of view: it is one knot of this larger net, the wide area Cultural District project, it is a complex system made of one royal residence, numerous minor historical buildings and a huge historical walled park of 734 ha. Moreover, it is an interesting implementation of the public-private partnership (3Ps) as a management model for the noble area of the Villa, it is an example of how the integration between conservation and valorisation is mandatory for a correct and effective management of the site and, finally, it is a perfect case for testing the effectiveness of economies of scale originated by the PPC strategy applied to a group of buildings.

The case study of the Royal Villa and Park has been chosen as one of the pilot projects after two years from the beginning of the start-up period of MBCD, as it was clear that there were the conditions among the stakeholders for strengthening the PPC strategic line. Thus, some hands-on experiences could have been involved in the Cultural District. For this reason, it has been possible to introduce the topic of the PPC in an already launched project within a professional/entrepreneurial and not academic milieu. The main goal of this kind of choice was the real implementation of PPC for the long-run conservation of this complex property. Therefore, the carrying out of conservation plans for the management of conservation activities is the first and most relevant result with all the related social and economic implications.

Furthermore, this complex is the fulcrum of a broader regional system and it can play a central role in the local economic development. However, before starting the long-term process of the local development, it has been necessary to face the problem of scarcity of financial resources for the restoration intervention of the noble part of the Villa.

The reduction of the budgets of public bodies implies that it is more and more difficult to finance public works in general, and also works on historical properties. A twofold strategy is ongoing: to reinforce the reasons for spending (public) money for conservation; to set up new strategies to make the process more efficient (preventive conservation, ICT, etc.). Nevertheless, it seems that this kind of approach is not sufficient because of the lack of resources, both economic and human (number of skilled public officers, etc.). Therefore, scarcity of resources forced to open to various forms of partnership with private players: sponsors, entrepreneurs, renters and concessionaires. According to the Italian law for public works, there are tools of three kinds for 3Ps: pure and technical sponsorship, concession, and project financing.

The case study of the Royal Villa in Monza offers a very recent example of collaboration between public and private entities and it represents a significant application of the 3Ps for the restoration of a BCH in the Italian context. In this case, given the nature of the site, concession has been chosen as the best tool in order to guarantee the required public control on the conservation of values attached to the monument. Restoration is most of all a cultural activity and thus it has been driven by a policy that protects the site and public fruition. The actors involved implemented a concession agreement with reference to the management and the use of the central part of the Villa, once restored. The formal arrangement was established between the property, constituted of different public owners united into a consortium constituted in 2009, and the private tenant for the duration of 22 years.

It is worth noting that the restoration works took two years. The concession is the tool adopted in order to develop management activities upon the Villa. On the one side, they should ensure the conservation of the cultural heritage, taking into account that, at the end of the period, the concessionaire must give the building back in good conservation conditions. On the other side, management implies also the valorisation, in this case related to monetary aspects for the private property without neglecting the public fruition of the asset.

The valorisation process requires a close cooperation between the concessionaire and the consortium, with the involvement of the local public and private stakeholders. In few words, the challenge is to find a balance between private and collective interests, which are, on the one hand, the economic sustainability and, on the other hand, conservation and public fruition of the cultural heritage. In order to achieve these objectives, a twofold proposal has been suggested: using integrated information systems for the property and facility management and drawing up a Conservation Plan on the medium-long term for the control of both the quality and the costs of mandatory conservation activities.

The Royal Villa obviously has an indissoluble bond with the Park and with the several local stakeholders. This kind of relationship needs a close cooperation in order to define a strategic vision and a set of tools for the planning of interventions upon the other wings of the Villa and the numerous historical buildings located in the park. In fact, the conservation activities upon the central part of the building represent the first step of an overall programme foreseeing the valorisation of the entire area (Nuova Villa Reale Monza S.p.A., 2016).

In the following section, three main topics will be analysed: the structure of the 3Ps agreement, the Conservation Plan for the noble part of the Royal Villa and the PPC approach for the historical buildings of the Park.

This kind of approach has been evaluated as coherent to the main concepts of the JPI project that aims at producing new local models directed to support PPC, maintenance and monitoring[3].

In order to clarify the structure of the paper, the principal themes will be:

- General analysis of the legal framework of 3Ps applied to the management of the BCH and its relation with the concept of integrated conservation, which entails the idea of managing preservation of the building and its use.
- The description of the operational tool for the implementation of the conservation strategy described above.
- The broadening of the vision to the entire Villa and Park complex system.

### **Subjects involved and public-private partnership**

The Royal Villa in Monza is one of the 3Ps most relevant cases using a concession instrument (Bonioti and Della Torre, 2016). The participation of private resources and the adoption of new business models in valorisation intervention of public BCH are strongly supported in a document issued by the H2020 Expert Group on Cultural Heritage (European Commission, 2015). The contribution of private funds and the collaboration with different productive sectors can represent, for the public administration, an opportunity to intercept financial resources not originally earmarked for cultural heritage and to introduce non-heritage funding derived from other domains to achieve heritage and non-heritage goals (CHCfE Consortium, 2015). This approach is aimed at bringing resources for conservation through negotiations, the exchange of good practices and abilities, the involvement of new kinds of public and the creation of a network. It implies a trade between different parts and consequently the introduction of the concept of trading zone, which represents a dialogue and collaboration despite the divergences between the various sectors. It illustrates a situation in which different actors provide their values, resources, activities,

policies and facts and share them within a sole economic circulation, in order to reach pre-established goals, overcoming the divergences in languages, methods and cultural systems (Gustafsson, 2011; Balducci and Mäntysalo, 2013).

The Royal Villa's concession constitutes a Design-Build-Finance-Operate-Maintain instrument of 3Ps (Martin, 2016), in which the "build" phase is replaced by the "conserve" phase (Rypkema and Cheong, 2012). In this context, the private company designed and executed the conservation works partially financing the operation, and it is managing the structure preserving it until the term of the lease, after which it will be transferred to the public owner.

Specifically, a call for tender was launched in March 2010, the contract was signed on July 7, 2011 and the restoration works on the central wing of the Villa were financed by both public and private entities from March 2012 to May 2014. The concession contract is related to the restoration and management phases: it defines that, after the restoration intervention, the tenant must manage the spaces under the control of the public entity for 20 years, after which it must hand back the asset in a good condition of conservation (Concession Contract, 2011).

The subjects involved in the transaction are diversified:

- The public owners of the Villa that are the State (Ministry of Cultural Heritage and Activities and Tourism), Lombardy Region, Municipality of Monza, Municipality of Milan.
- The grantor during the design and execution phases: Infrastrutture Lombarde S.p.A., which is the contracting authority. It managed the tender aimed at identifying the tenant and it conducted tight surveillance on the project and construction management phases.
- The grantor during the management phase: the Consortium Royal Villa and Park of Monza, which includes the public owners mentioned above plus another two entities that are not owners, which are the Province of Monza and Brianza and the Confindustria Monza and Brianza. The organism was founded on July 20, 2009 and represents the no-profit management entity. Since January 1, 2012, each owner institution conferred the building's management upon the consortium.
- The tenant of the concession contract: Nuova Villa Reale Monza S.p.A. It guaranteed the residual financial provision for the intervention through the concession agreement; it completed the final part of the design, executed the works and is managing the structure (Infrastrutture Lombarde S.p.A., XXXXb).

According to the project brief, the new functions endow the Villa with spaces for public use, such as temporary exhibitions, events, conferences and meetings, a restaurant and commercial activities (Infrastrutture Lombarde S.p.A., XXXXa). Since the signing of the contract, the concessionaire developed cultural initiatives, events, exhibitions and laboratories aimed at promoting the Royal Villa. On the other hand, the consortium is allowed to use part of the spaces occupied by the concessionaire free of charge for 36 days per year and it has to elaborate a strategic plan concerning the cultural development and the valorisation of the entire area, setting up an integrated management approach. The control mechanism is regulated by the activity of a supervisory committee which is composed of five members, three for the public bodies and two for the private subjects, which should monitor the formal respect of the agreement conditions. Furthermore, a scientific committee was foreseen for the evaluation of the quality of the initiatives and for addressing the activities promoted by the tenant.

The declared aims of this 3Ps are: to contribute at ensuring the public character of the intervention and to valorise the historic building and its surrounding area through the openness to different social contexts, institutions and users (Infrastrutture Lombarde S.p.A., XXXXb).

The applied procedure represents one of the possible approaches through which the public administration can manage its wide heritage, frequently in a condition of carelessness. In the Monza experience, a concrete dialogue between public and private entities led to the realisation of the restoration works in two years and it is an attempt to conserve and to design valorisation activities in a long-term perspective. From the one side, the conservation quality of the built heritage becomes part of public entities agenda and on the other side the concessionaire is realizing investments and conservation activities aimed at ensuring the best management and use of the spaces. Actually, during the restoration works, the tenant began designing the future cultural and commercial activities aimed at valorising the Villa, such as the creation of an exhibition space, civil and plant works inside and outside.

It is important to highlight that such a solution is not a renouncement to the public responsibility toward the cultural heritage. The consortium, which represents the public authority, has the role of supervising the use and the conservation activities executed by the tenant in order to get the property back in the same condition.

Obviously, the formal responsibility is not sufficient to guarantee the adequate control of the agreement respect. It is necessary to recruit staff with specific competences/skills in the field of BCH conservation, but this is a generalised criticality in the Italian public sector.

As in 3Ps agreements, the arrangement foresees a long-term collaboration between governmental and non-governmental actors aimed at realizing public duties, in which resources and risks are proportionally shared on the basis of their own skills (Cori and Paradisi, 2011). In fact, resource, responsibility and knowledge pooling between stakeholders who pursue different logics allows to face situations of complexity, uncertainty and risk. Partners involved are not only interested in the return on investment, but also in the exploitation of the specific differences, cultures and ideas in order to define innovative management models and solutions (Gualini, 2010).

The continuity in the use and a daily dynamism linked to simple local needs, together with a good management of the spaces, are a fundamental guarantee for the PPC of the BCH.

In the current period, the building conditions and the conservation activities are, respectively, controlled and managed through a specific software for the maintenance management (Nuova Villa Reale Monza S.p.A., 2016).

### **Tools and strategies for the royal villa of Monza conservation**

The implementation of the PPC has been carried out on the central part of the Royal Villa thanks to the concessionaire willingness to test this methodology, which is composed of two main actions: prevention and planning.

Preventive actions are all those activities that are based on the risk assessment and thus are focused on the mitigation of all the harmful external conditions. As conservation has been defined as a circular process, it is necessary to plan all the conservation activities in a proper span of time, in order to be more timely and cost effective.

The complexity of the PPC process, given the quantity of the information that it produces and the heterogeneity of the involved actors, requires an implementation method able to manage the whole process. The Conservation Plan is the tool for the data organisation and for the planning of the conservation activities concerning the building. It puts the economic component into long-term programming and it allows the information exchange among the subjects involved in the process.

In Italy, the Conservation Plan was introduced in the 2000s as the equivalent for historic building of the “maintenance plan,” mandatory in the sector of public works. It is a tool for filing information about the buildings, and it is a document explaining the strategies to convert the instrumental role of “programmed maintenance” into the strategic role of “Planned Conservation” (Della Torre, 2003a, 2014).

The Conservation Plan is composed of the Technical Handbook, which is the instrument for the analytic description of the building and its conservation condition; the Conservation Programme, i.e. the list of the scheduled conservation activities (according to the Italian law for protection of cultural heritage: prevention, maintenance and major interventions), which includes information about how, when and by whom the activities have to be carried on; the economic budget and user handbook, which is the guidelines for the non-technician users (cleaning teams, keepers and visitors).

The procedure of compiling and managing the plan is divided into three phases: setting up, drawing up and carrying out. The Conservation Plan is a dynamic tool, and it is enriched over time by the recording of the events that affect the architectural organism. The updates concern transversally all the documents in the plan: the technical handbook has to be updated with the information coming from the inspections and the implementation of the activities foreseen in the programme; the Conservation Programme may be fine-tuned depending on the results of the above cited activities as well as the Economic Budget.

The Conservation Plan can be compiled through various information technology tools that allow data logging and management: word processing programs, spreadsheets, databases/information systems.

Undoubtedly, both the recording and the consultation/management of the information (especially the latter) vary considerably depending on the tool. Databases and information systems offer the opportunity to manage in dynamic mode, through queries and statistics, large amounts of related data. The most interesting features are: direct link between data and documents (attachments); web-based system which allows the access, even with differentiated levels, to multiple users; interoperability with other information systems and the possibility of querying and creating statistics.

In the last few years, various ways of compiling the Plan have been tested, including data association procedures to a two-dimensional and three-dimensional parametric graphical base, through links to GIS and BIM (Pili, 2014; Osello and Rinaudo, 2016).

Therefore, besides the quality of the interventions supervised during the execution of the restoration works, another important aspect is that the public entity must monitor the conservation of the building during the 22 years concession. The concessionaire is in charge for the management of the Villa and he/she is responsible, both from the legal and economic point of view, for its conservation conditions. In order to guarantee the compliance of this commitment, in the formal agreement there is a condition about the mandatory use of a specific information system.

The concessionaire opted for the integration of two different information systems: Manpro.net information system, for the plants maintenance and for the property management, and *Planet – Beni Architettonici* for the facility management of the conservation activities.

The information system specific for the BCH has been developed within the “Monumentenwacht Italy” project[4] as a heritage specific evolution of I.S. “Planet Maintenance,” widespread in the facility management sector (Benatti *et al.*, 2014). Thanks to its compatibility with the management systems, Planet is interoperable with human resources and activities (Manpro.net), allowing the private manager to coordinate the spaces. Furthermore, in this way, it is possible to plan both valorisation and conservation activities.

The Royal Villa Conservation Plan has been drawn up after the restoration works, thus it has been possible to collect data from the project and the restoration site. For this reason, a large amount of information was available, from the material characteristics up to the intervention costs resulting from the price lists (Lai and Pili, 2014).

Planet allows the organisation of data within a hierarchical structure configured by levels, from general to detail, where each technological element is uniquely identified by a code. The information and data for the individual finite elements are available to the various

professional figures involved in the process. Data entry and data management within I.S. Planet are carried out through thematic panels organised for sections according to the different documents of the Conservation Plan.

The work flow is quite simple and logic, even if the information system is complex. The first step is the drawing up of the plan documents filing the data in the information recording section. The second phase is scheduling all the activities, with the indication of the required technical skills and costs. Finally, there is the section for the work orders creation. The work orders are the tool for the economic control through contract management, the work accounting, and technical control through operational flow definition. They keep traceability of all the events (Benatti *et al.*, 2014).

Long-term planning is the premise for a rational management of economic resources, in compliance with the basic principles of the PPC process. For instance, in this case, the monitoring activities have been planned taking into account the costs (to be supported by the purchase/rental) of all the provisional works/means necessary for carrying out the activities in accordance with the operating procedures of the Conservation Programme. The cost calculation is based on the principle of calibrating and assigning the activities in a long-term schedule avoiding the concentration of the expenditures and using the costs coming from the past interventions for the spending prevision. Other activities have been scheduled according to the calendar of the valorisation activities: maintenance work of the wood flooring waxing, for example, is programmed in the days between the outfitting of the exhibition in progress and the setup of the following one, in order to avoid the interruption or to interfere with the fruition. The global vision of the activities and related costs, with the specifics of the means, procedures and professionals involved, made it possible to formulate a correct time schedule and a proper budget, in order to meet both the conservative and the economic needs.

Moreover, the aim of the interaction between I.S. Planet and I.S. for facility and property management is to avoid any interference between the conservation activities and the public/private fruition of the Villa, as the management encompasses conservation and valorisation in an integrated and systemic vision.

The outputs of the monitoring/control activities are the evaluation of the effectiveness of the restoration works and the detection of future specific risk situations. Therefore, this kind of activities has a preventive efficacy in order to avoid degradation or decay.

After a first start-up period, the management of the Conservation Plan is carried out in full autonomy by the concessionaire who carries on the execution of the plan following the formulated and programmed action plan, while updating the data.

The Royal Villa of Monza represents one of the first real cases of application of the Conservation Plan meant as a tool for a long-term strategy. Thus, the statistical data will be available in the next years if the concessionaire will keep on implementing and updating the system. The collection of these data is the base for the analyses and the economic evaluation of the foreseen financial-economic balance. It is important to stress that the economic evaluation has to consider also the cultural and historical values that a continuous care is able to guarantee instead of a single event – as a restoration – which is aimed at repairing damages which often lead to the substitution of elements, with a consistent loss of material and authenticity. The aim is to confirm convenience both in terms of costs and benefits, both in terms of cost distribution and decay prevention (Della Torre, 2003b).

However, it is possible to make initial evaluations of the method adopted for the Royal Villa of Monza. The answer is certainly positive in terms of: effectiveness of planning conservative activities implemented within a building open to visitors, breakdown of expenditure over the long term and autonomy of managing of the conservation process by the concessionaire.

## **Integration of preventive conservation and valorisation strategies for the management of the Royal Park**

The complexity of the Royal Villa in Monza – due to the presence of the annexed park where other historical buildings are located – also required an analysis on a wider scale. A management model has been elaborated in order to define a complete and coordinated vision of this cultural and landscape heritage.

The Park of Monza is one of the major European historical parks and its 14 kilometres wall makes it the largest wall enclosed park in Europe. It occupies 734 hectares at the Northern part of the city of Monza, bordering five different municipalities and it is passed through by the river Lambro. The park includes agricultural areas and productive activities, private residences, sites devoted to culture and environmental education, accommodation and restaurants, leisure and sporting facilities, and the well-known racetrack of Monza, built in 1922.

The vast green area incorporates numerous (34) complexes of historical buildings and monumental landmarks, such as villas, rural buildings, water mills, and other smaller buildings and infrastructures scattered in the green, as a part of a larger system of paths, of visual axes and driveways.

Many of these buildings present different problems concerning both their conservation condition and their functional adaptation. However, it can be noticed that they have also many common aspects: they are constructed with the same materials and techniques, and they are situated in the same context. Indeed, the nature of the problems and the present environmental risks is similar in most cases and regards mainly the presence of water, vegetation and air pollution, aggravated sometimes by the inappropriate management, the unsuitable use and in general by the lack of regular maintenance, and the limited knowledge of daily care practices by the users (Konsta, 2014).

A systemic approach to the problems is required as the management issues have to face: the extensive size of the area, the large number of buildings, their different typologies and their functional diversity. Furthermore, there are common aspects to take into account, such as the physical characteristics and the inadequate conservation and valorisation practises.

Therefore, the aim of the project is to develop an operational model for the complex assets management through the integration of both conservation and valorisation practices. Such model must be able to cope with the future transformation of the buildings in a long-term perspective.

The focus of the methodology is twofold: first, the analysis of the physical conditions of the BCH (condition and risk assessment) in order to define the intervention priorities and to programme the monitoring and maintenance activities; second, the gathering of data related to the management aspects (property, functions, resources, policies and practices), with the intention to elaborate a synoptic framework, which, in turn, will form the base of a master plan (Moioli and Konsta, 2017).

The research was developed in four phases:

- data gathering;
- data analysis and preparation of different record sheets depending on the nature of the information;
- systemic elaboration of data; and
- setting-out of a master plan.

The first phase of data gathering started with the collection of the existing documentation, as well as the examination of similar activities carried out previously, with the aim to re-order the results. In detail:

- SIRBeC records (Information System for the Cultural Heritage of the Lombardy Region).
- Database of the Consortium Royal Villa and Park of Monza.

- PIM records – preliminary study for the rehabilitation and the valorisation of the Royal Villa and the Park, carried out in 2001 by the Studies Centre for the Intermunicipal Planning of Milan Metropolitan Area.
- The three-year organic programme for the maintenance and the rehabilitation of the Park (Regional Law No. 40/95).

Subsequently, the gathered material was enriched with new information provided by visual observations, photographic survey and interviews on site.

The second phase (data analysis and their registration) led to the update of the PIM record and to three new record sheets for each building: the analytical record, the summary record and the synoptic record.

The analytical record is ordered in the different technological classes and contains information about the materials and the techniques, the description both qualitative and quantitative of damages, and provides measures divided in: preventive actions, regular monitoring, maintenance activities, and repair or restoration interventions. The summary record concerns the overall evaluation of the building conservation conditions, defines the priorities and schedules all the conservation activities on long-term. The synoptic record is related to the administrative information (name, address, cadastre); contractual terms (duration, annual rent); functions, technical data (surface area, volume, number of floors); technological systems (safety/certifications, warning and protecting systems); and overall conservation condition assessment.

In the third phase, the data were re-elaborated and translated into thematic maps and pie charts (Figure 1), bringing out in this way the quantitative aspects and highlighting their relevance regarding the management issues. Specifically, the analysis regarded the following attributes:

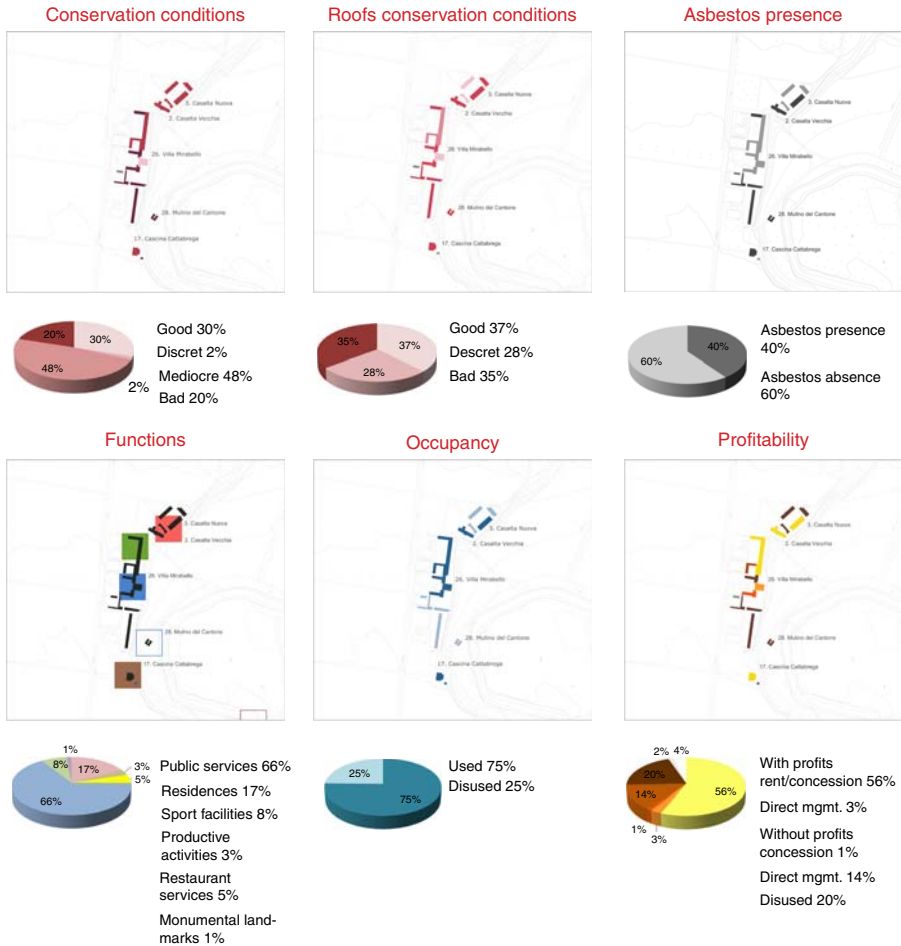
- occupancy (used, disused);
- functions (residences, productive activities, restoration services, sport facilities, monumental landmarks);
- overall conservation condition (good, fair, mediocre, bad);
- roofs conservation condition (good, fair, bad and asbestos presence); and
- profitability (with profits: rent/concession/direct management, without profits: concession/direct management/disused).

Thanks to the crossing between the general/use information with the condition assessment, it has been possible to create the bases for a master plan which considers both the opportunity and the possibility of adding new functions or strengthening the existing ones according to a sustainable strategic vision in the long run.

More in detail, on the basis of the results of the previous analysis, a methodological proposal for a master plan has been drafted: the input is the definition of seven clusters, according to the typology of the buildings, the destination of use, their particular vocation and the management approach.

The proposed clusters are:

- The five gates that characterise the entrances to the Park represent the link with the city. A social mobilisation project is proposed for the creation of groups interested in managing the buildings by placing productive activities (cultural, creative, social enterprises).
- The villa Mirabello according to a recent project will be transformed into a museum and the proposal is to extend the intervention area and use all the adjacent buildings as commercial and service spaces linked to the new museum.



**Figure 1.** Data analysis in regard to the current conditions of the historical buildings in the Park of Monza

- The valorisation of the mills jointly with the irrigation canals thinking to a project of energy efficiency, renewable sources and sustainability.
- The identification of buildings to set aside for accommodation structures, according to the National Trust model, in order to create a diversified offer.
- The system of restaurants and bars.
- The sport facilities cluster that needs to be more integrated into the valorisation process of the whole complex, respecting the conservation of natural environment and the historical value of the park.
- The buildings with private activities, which must be integrated into the valorisation mechanism as the sport facilities cluster.

### Conclusions

The MBCD project was an attempt to carry out in the field of conservation and valorisation of cultural heritage best practices able to produce positive effects in terms of a local

sustainable development. One of the outputs is the dissemination/interpretation of results in an action research framework. For each one of the on the field activities foreseen in the project, thanks to the monitoring system adopted, it is possible to analyse the process and all the implementation phases, highlighting positive aspects and criticalities. In this way, it is also possible to propose a replicable model, or at least to tune the process avoiding errors and learning from the experience. The model can be concisely described as follows: a best practice for BCH management should be based on the idea of the integration of conservation and valorisation, where knowledge coming from conservation activities becomes the driving factor for the optimisation of maintenance costs, the effectiveness of restoration investment and valorisation activities, meant as knowledge dissemination and not only as the financial revenues of ticketing and merchandising.

As mentioned in the introduction, the case study is also part of the JPI project CHANGES, which aims at identifying best practices for new local models capable to include the diversity of European Cultural Heritage and skills required in built heritage activities to support PPC, by increased understanding of:

- conservation and valorisation as preventive measures;
- effectiveness of maintenance, involving relevant craftsmanship and expertise;
- economic mechanisms underlying built heritage conservation in the context of regional economy and the (wider) construction sector; and
- impact of knowledge gain and its dissemination on smart economy for built heritage conservation, heritage management and for the construction sector.

In the case of the Royal Villa in Monza, the analysis is focused on the management model and the implementation of tools for PPC. The adoption of the PPC strategy on a group of buildings has the objective of going beyond qualitative models introducing evaluation methods closer to reality trying to understand which are the conditions that affect the decision making.

The first lesson learned is that a successful management of a complex system should be driven by the awareness of the importance of the long-term vision and the effectiveness of a knowledge-based approach for conservation and valorisation. The theoretical framework is given by research on cultural heritage as a factor for territorial capital, according to the idea that the best results of investments on cultural heritage are to be found “upstream” (CHCfE Consortium, 2015, pp. 195, 196, 197). In this perspective, the 3Ps agreement can be a positive model if the public sector is able to propose a governance based on cultural/scientific contents and on a rigorous control of the respect of the agreement conditions, especially as far as the substantial aspects are concerned. Furthermore, it should guarantee the achievement of the economic-financial equilibrium for the private company and the best quality for the conservation of the Villa. So it will be important to monitor the cost/efficiency of a post-intervention maintenance system integrated into the facility management and coordinated with the property management, which should encompass the data coming from the valorisation activity (number of visitors, ticketing, quality and quantity of users, number of cultural projects, number of partners). The implementation of PPC by means of an I.S. has the objective to meet with both the conservation needs and the achievement of the economic-financial equilibrium, which is at the base of the 3Ps management model.

The second main finding is related to accountability and monitoring in the very complex decision-making system entailed by the “trading zone” model. The innovation process needs to be continuously monitored and adapted through evidence-based policies. It is important to notice that the final quantitative data and results will be available in a quite long time: the average duration of a Conservation Plan is ten years while the concession will last for 20 years. Thus, a critical issue detected by this applied research has been the need of

adequate tools for the management of the process, introducing accountability as a requirement for the governance system. Building and sharing these tools has been one of the most crucial issues during the first stages of the process.

The third finding concerns the issue of skills. The proposed way of carrying out PPC requires professionals with some more skills than an expert conservation architect normally has. The conservation process entails a multidisciplinary approach, thus a mix of hard and soft skills becomes more and more crucial when facing the challenges posed by such a broader vision of the process, encompassing more strategic responsibilities, as the process itself implies many more interdependent relationships. It is worth noting that the criticalities emerged during the work are mainly related to the lack of specific competences, and the tendency to focus on the short run.

Briefly, the results so far achieved are: cultural production; knowledge sharing; creation of partnerships; dissemination of the PPC approach; and the awareness of the need for evaluation models. The future perspective is that the availability of a model, or at least of some best practices described in their main features, can be an incentive for local policymakers to adopt the PPC strategy for the management of BCH.

### Notes

1. The first research in 1999, “Sperimentazione e affinamento delle linee guida per i documenti tecnici della conservazione preventiva e programmata del patrimonio storico – architettonico” (experimentation and improvement of guidelines for the technical documents of Preventive and Planned Conservation of cultural heritage), has been promoted by Lombardy Region and it has been coordinated by Prof Stefano Della Torre – Politecnico di Milano. The research activities went on till 2005.
2. Cariplo Foundation since 2008 has launched every year a grant for conservation projects based on the preventive and planned conservation approach. The projects financed till now are about 60 which have to be added to the several cases carried out within the framework of the research activities above mentioned and to other experimentations in Italy ([www.fondazionecriplo.it/portal/upload/ent3/1/Bando%20Tecnologie%20Innovative.pdf](http://www.fondazionecriplo.it/portal/upload/ent3/1/Bando%20Tecnologie%20Innovative.pdf)).
3. CHANGES is a European Project supported by the JPI Heritage Plus programme. The partners are: Politecnico di Milano – ABC Department, Katholieke Universiteit Leuven – MAT Division, Uppsala University, Delft University of Technology – Heritage & Architecture Section, Foppoli Moretta e Associati. The associate partners are: Monumentenwacht Noord-Brabant, Monumentenwacht Flanders, Consorzio Villa Reale e Parco di Monza, Navarra Gestioni, Assimpredil ANCE – Association of Building and Related Companies of Milano, Lodi, Monza e Brianza Provinces.
4. Research (2010-2013) financed by Lombardy Region in the frame of a programme aimed at enhancing the competitiveness of SMEs in the field of cultural heritage.

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