



CHANGES-BE

**Changes in cultural Heritage Activities: New Goals and benefits
for Economy and Society**

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Axis 6: Management of collections



NETWORK PROJECT

CHANGES-BE

**Changes in cultural Heritage Activities: New Goals and benefits
for Economy and Society**

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FINAL REPORT

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ABSTRACT

CHANGES (Cultural Heritage Activities: New Goals and Benefits for Economy and Society) project aimed at producing new local models capable to include the diversity of European Cultural Heritage and skills required in built heritage activities to support Planned Preventive Conservation, Maintenance and Monitoring (PPCMM), 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;
- impact of knowledge gain and its dissemination on smart economy for built heritage conservation, heritage management and for the construction sector.

During the **first year**, three general meetings among the partners took place, with the aim to discuss and conceptualize previous experiences (Monumentenwacht, Halland Model, Distretti Culturali) carried out by the principal investigators, as well as to share methodologies, in view of the following research activities. This analysis (WP2) gave the required input to next action-research in the different countries. It also constituted a first scientific achievement, seeing that the available literature on the three models does not provide any specific analysis in terms of societal and economic impacts (conservation quality, enhancement of capacity/skills, people/community involvement, impact on the market, impact on decision-making).

Moreover, the internal exchange platform and the project website (www.changes-project.eu) were created. The website represents the main dissemination tool; it provides all the information related to the project themes, objectives and results, and it is continuously updated.

During the **second year**, the work focused on the implementation of maintenance systems and the investigation into efficacy of the maintenance practices in:

- Belgium (WP3): KU Leuven collaborated with Monumentenwacht Flanders to study maintenance problems of historic buildings (listed and non-listed), to understand monitoring/reporting, to identify types of interventions in the past, to evaluate those interventions in terms of effectiveness, durability (service life) and costs, and to understand the skills and knowledge involved in this process.
- The Netherlands (WP4): TU Delft in collaboration with Monumentenwacht Noord-Brabant looked into the value and the role of the latter within the Dutch Heritage Conservation philosophy/system. Case studies, interviews and a survey were carried out in order to understand the inspection and reporting methods, and how they have influenced daily maintenance practice.
- Italy (WP5): Politecnico di Milano and Foppoli Moretta e Associati consulting engineers, in collaboration with the associate partners, through the analysis of different case studies, investigated the costs of post-intervention maintenance systems integrated into the facility management, the role of conservation activities in the framework of valorisation strategies, as well as the relationships between the selected pilot projects and the surrounding cultural systems, such as the involvement of public, professionals, grass roots of organisations, etc.

The above-mentioned topics were discussed during a general meeting among all the partners that was held in Milan on May 2016. Moreover, during July 2016, a period of work exchange between the researchers coming from Belgium, The Netherlands and Italy, fostered the comparison of good practices and abilities, in reference to maintenance systems adopted in the diversified local contexts.

Concerning the dissemination of the project themes and the knowledge transfer (WP8), two main events were organized throughout the second year:

- The International Conference “Cultural heritage management: conservation and valorisation in an integrated perspective”, which was held at Villa Reale in Monza (Italy) on 26 May 2016, constituted a relevant occasion to discuss and reflect upon conservation and management practices for built cultural heritage.
- The International Conference “Structural Analysis of Historical Constructions SACH 2016” was held at Kasteelpark Arenberg in Leuven (Belgium) on 13-15 September 2016. The theme of the Conference “Anamnesis, Diagnosis, Therapy, Controls” emphasized the importance of all steps of a restoration process, in order to obtain a thorough understanding of the structural behaviour of the built cultural heritage.

During **the third year**, the activities concerning the implementation of maintenance systems and the investigation into the efficacy of maintenance practices in Belgium, in the Netherlands and in Italy were completed, providing the necessary data input into the succeeding research. In detail, the investigation focused on two principal issues:

- On the one hand, the analysis of costs and benefits of planned maintenance, mainly related to the single historic property and its management, based on the data provided by the previous work of the partners. The aim was to go beyond the popular sentence that maintenance is better than cure and less expensive, and to understand the factors that affect decision-making (WP6).
- On the other hand, the analysis of policies, gained values and the legal framework of the different practical experiences of the partners, that lead to regional development as a result of historic conservation project (WP7).

The results obtained by these analyses, provided policy makers and influencers with a set of simple rules for more effective funding policies.

The activities related to the dissemination of the results and the knowledge transfer, during the third year concerned mainly the organisation of open seminars and conferences involving the project partners, students and stakeholders, as well as the publication of the project scientific outputs. The former includes:

- The International Conference on “Innovative built heritage models and preventive conservation”, which was held on 6-8 February 2017, in Leuven, where the first achieved results were presented.
- The International Conference on “Professionalism in the built heritage sector”, 5-8 February 2018, in Leuven. The conference was organised by the Raymond Lemaire International Centre for Conservation.

On this occasion, a presentation was given in order to present the final outcomes of the project, which have been uploaded on the project website.

The latter comprises the publication of the proceedings of the first international conference mentioned above, as well as the publication of a series of peer-reviewed papers.

Keywords

Cultural heritage, benefits, economy, sustainability, management, transition

1. INTRODUCTION

Environmental sustainability concerns are driving investments in conservation, but also construction sector at large, towards inclusive and sustainable development as well as innovation. Increasingly arguments rise against large restoration works, whilst a paradigm shift is observed towards Planned Preventive Conservation, Maintenance and Monitoring (PPCMM). The main benefits of the new approach are the cost-effectiveness for private owners and managers of historic properties, improved quality of protection of built heritage and environmental enhancement, empowerment of local communities resulting in increase of human and relational capital in a local context. The research aims at producing new local models capable to include the diversity of European Cultural Heritage and skills required in built heritage activities to support PPCMM, by increased understanding of: 1/ conservation and valorization as preventive measures; 2/ effectiveness of maintenance, involving relevant craftsmanship and expertise; 3/ economic mechanisms underlying built heritage conservation in the context of regional economy and the (wider) construction sector. 4/ impact of knowledge gain and its dissemination on smart economy for built heritage conservation, heritage management and for the construction sector. The proposal meets the JPI call requirements as interdisciplinary research will lead to advances in understanding of cultural heritage and will produce outcomes ready to be transferred to stakeholders and society. Research will develop methods, technologies and procedures for a sustainable long-term care as a strategy to manage changes, in the framework of a learning environment where heritage is understood in connection with people as a tool for the production of social and human capital. The project outcome includes the proposal for a funding scheme providing the conditions to support the transition toward a sustainable conservation process. The project addresses the themes identified in the strategic research agenda: “Developing a reflective society”, “Connecting people with heritage”, “Creating knowledge” and “Safeguarding our cultural heritage resource”.

2. STATE OF THE ART AND OBJECTIVES

The proposed research takes into account the evolving role of heritage activities in the framework of a Knowledge and Creative Economy, giving increasing relevance to the “making” of people. Heritage preservation therefore has to embed itself in new planning instruments, which combine spatial planning with e.g. regional smart specialization strategies. In this way, heritage protection becomes a pro-active process, or a production factor, where historic buildings and related activities could be used as an infrastructure for innovative initiative in the creative industry (Gustafsson 2013). Targeting benefits on the long run, the research will address non-use values (Moioli 2013) and spillovers which are not immediately related to the use of cultural properties, but may give larger benefits to local systems in terms of increase of human and relational capital.

Heritage valorisation, which is necessary to boost European competitive advantages, cannot be carried out without an enhancement of conservation practices: preventive conservation ensures heritage integrity and is assumed cost-effective on the long term. (Forster and Kayan 2009) However, today a large-scale implementation of the methodology never started because it still lacks reliable evaluations of cost-benefits, that is the main output of the proposed research. Such

evaluation should be based on a sound analysis of the whole process of activities carried out on heritage properties, taking into account a system of diverse relationships inside and outside the heritage sector. Moreover, similar to preventive medicine and public health, preventive conservation can be a successful strategy because it addresses the larger conservation process and system through policies rather than focussing solely on single actions.

The proposed research aims at identifying and understanding the diversity of skills needed for quality protection, conservation and management of built cultural heritage. The outcome could be useful not only inside the heritage sector, but also to job creation within the construction industry at large. The construction industry needs guidance in the current crisis in finding new sustainable markets as well as in defining the required knowledge (including skills) to implement this paradigm change. Considering that proper built heritage maintenance starts from a good understanding of the applied construction techniques, one of the aims is to conduct research on how adequate knowledge of built heritage maintenance techniques and related construction practices can be of value in the mechanisms underlying the transition in the conservation sector and the construction industry at large. The project will demonstrate that Planned Preventive Conservation (PPC) allocates and uses existing resources for heritage management more efficiently than curative conservation by means of creating synergies and advantages. PPC can improve preservation using the available resources, that is without an increase of spending even if the amount of protected heritage increases, while more skilled people will reinforce the local construction system. The increase in local knowledge economy builds upon diverse European approaches ranging from the valorizing of craftsmanship and traditional practices until the development of innovative techniques including high-qualified restorers and scientists, as well as the implementation of ICT tools.

The mix of disciplines involved in the research enables to deal with heritage as a complex system. Furthermore, this approach is made mandatory by the preventive paradigm, and it is able to take into account the diversity of stakeholders involved in the proposed research. Thereby the concept of “trading zone” can be usefully applied to elaborate an innovative concept in which heritage is no longer the monopoly of restricted groups, but becomes a production factor for an inclusive and sustainable development model, i.e. the economy of tomorrow. The “trading zone” is an active arena or a field of force corresponding to the actors’ various policies, values, legal frameworks and resources. The “trading zones” are therefore negotiation models between cultural heritage, economic growth and sustainable development.

The final outcome of the project will be the proposal for a funding scheme (mixed origins) that would provide the conditions for supporting the transition based on learning from maintenance scheme and providing necessary skills and knowledge for qualitative PPC conservation strategy (understanding maintenance is covering all aspects of construction on a small scale). The many (+20) years of practices of assessing and monitoring state of conservation and maintenance advice by Monumentenwacht in the two regions with leading experience in that field (The Netherlands and Flanders) will be the fact base to value the benefit of maintenance, the effectiveness of the maintenance and conservation practises and to evaluate the need for skills for qualitative conservation. The experiences from Italy and Sweden will help in dealing with the links between conservation and policies on a larger scale.

Objectives:

1. Highlight the theoretical framework which makes built cultural heritage a production factor for inclusive and sustainable development
2. Highlight the relationships between conservation activities and valorisation strategies as a “trading zone” among a number of stakeholders
3. Evaluate built heritage maintenance interventions in terms of effectiveness (quality), relevant craftsmanship and expertise (knowledge), cost (economics) and additional external benefits
4. Define the economic mechanisms underlying the whole process of built heritage preservation (prevention, monitoring, maintenance, restoration, management) and how this could be integrated with regional economy and the construction sector (funding, smart specialization strategies, regional innovation strategies).
5. Understand the impact of research, development and dissemination of adequate knowledge of built heritage conservation on the construction sector
6. Formulate opportunities to invest in research, development and dissemination of adequate knowledge of built heritage conservation techniques and related construction practices
7. Formulate and disseminate a proposal for a funding scheme that would provide the conditions of supporting the transition based on learning from Planned Preventive Conservation strategy.

3. METHODOLOGY

Environmental sustainability concerns are driving investments in conservation but also in the construction industry at large towards inclusive and sustainable development as well as to innovation. Therefore it is important to clarify the impact of such investments. This research proposal is situated in the context of the construction industry that is experiencing a transition from constructing new buildings towards maintaining existing structures: it becomes less customary to speak of the “construction industry”, but of an “industry of the built environment”. This transition can benefit from the knowledge gained in the field of heritage preservation. This observation was made based on two of the most challenging and discussed changes that our society is facing today. First, due to the economic crisis, it is of importance to clarify the impact of investments for job creation as a part of an inclusive and sustainable development, and especially for sustainable economics growths and innovation (Gustafsson 2009). In addition, this transition is driven by environmental sustainability concerns, whereby maintaining existing structures contributes to environmental viability (Power 2010), prolongation of the physical service life of buildings and building parts (Thomson and van der Flier 2009), waste-avoidance activity (Bullen and Love 2010) and preserving embodied energy (Carroon 2012).

At the same time, these changes are also finding resonance in the built heritage field. Increasingly arguments rise against large restoration works that result too often in postponed interventions, i.e. the high cost of restoration, the always-increasing demand for funding and the uncertainty of sufficient revenue to cover costs of property management. In response, a paradigm shift is observed in the research field towards Planned Preventive Conservation (PPC), maintenance and monitoring. Heritage professionals generally acknowledge the synergistic relationship between sustainability and

PPC as it entails more – than curative conservation and restoration – preservation of built heritage values and authenticity, a “non-renewable capital”. The main benefits of a PPC, maintenance and monitoring approach for built heritage are considered the cost-effectiveness for private owners and managers of built heritage (Forster and Kayan 2009), the quality protection of built heritage and environmental enhancement (Van Balen and Vandesande 2013), the inclusion of Heritage sector in employment policies (Gustafsson 2009; Ižvolt and Smatanová 2014) and the empowerment of local communities in dealing with heritage (Della Torre 2010).

The link between conservation activities and citizenship, within the spirit of the Council of Europe’s Framework Convention on the Value of Cultural Heritage for Society (Therond and Trigona eds. 2009), has therefore to be investigated, also benefiting from ongoing researches on values and value assessment, also financed by Joint Programming Initiative.

The research aims at building a common frame for experiences, which span from the case of the single property to the scale of integrated policies at regional level, as the proposers share the idea that, to become a production factor for the European society, built cultural heritage has to be dealt with as a system, learning from the preventive conservation paradigm.

Research design and methodology, including interdisciplinary approach

The research methodology which is followed to produce the expected outputs is described below. The work plan is split into eight work packages and follows the logical flow of research activities.

The work plan includes a variety of methodologies applied:

- elaboration and modelling of previous research activities and experiences of the partners,
- action research,
- data gathering and assessment,
- dissemination and knowledge transfer.

As one of the strengths of the proposal is the rich endowment, which partners give to the project thanks to previous research activities, the research has to start by sharing and conceptualizing these experiences. As it is necessary to compare experiences made in very diverse contexts, however with a common basis and common targets, such work can be described as “meta-modelling” the different contributions, that is analysing, construction and development of the frames, rules, constraints, models and theories applicable and useful for modelling the problems of the highly complex system of the preservation of built cultural heritage, seen in the frame of the “constructions sector” at large. The contributions by partners are necessarily fragments of the whole, so that a multidisciplinary approach is needed in this preliminary phase to make the interdisciplinary dialogue happen.

This project describes as “Action Research” the work that will be carried out in the field, with the cooperation of associated partners (Monumentenwacht Vlaanderen, Monumentenwacht Noord-Brabant, Consorzio Villa Reale e Parco di Monza, Na.Gest, Assimpredil ANCE) mainly in WPs 3, 4 and 5. The main purpose of this work is to collect accountable data to be processed in next work packages, but it seems definitely relevant that researchers gathering these data will not act as external observers; data themselves cannot be reduced to simple indicators. Therefore researchers will be involved in hands-on activities, carrying out inspections, plans, monitoring, and sharing

evaluations of costs, problem-solving and planning activities. This will be the way to strengthen the cooperation with associate partners, stimulated towards and investigating attitude (Bartunek 2007) and to reflect on their need for change. Of course it will also facilitate the access to relevant data, but there is something more. Given the attention paid by the project to different aspects, for the methodological perspective it seems much more effective if the observer participates in the play, taking direct experience of the process, the criticalities and the progresses. Participant Observation, typically implemented in qualitative data collection and developed in fields as anthropology, sociology and ethnology, enables to understand the sense of data, to correct wrong assumptions, to extract untold messages strengthening the attitude to listening at what players feel. It is required as the proposed research aims not only at assessing the physical condition of buildings, but also at detecting the attitudes of each stakeholder in the process.

Data gathering and assessment will be prepared through the above-described multidisciplinary discussion of previous experiences brought by partners as their endowment to the project. Therefore from the beginning the type and the quality of the data will be made functional to the foreseen analyses, avoiding any mismatch between the output of one step and the expected input of the next one. Beside the initial discussion, the work plan envisages that the activities of data elaboration in WPs 6 and 7 will start early, before the conclusion of previous work packages (WP3, 4 and 5). This enables a trial stage, during which the algorithms for quantitative evaluations, the models for qualitative assessments as well as the quality of data can be tested as they are made available.

WP6 (desk work) focuses on comparing the tools currently used in different countries, the breakdown codes adopted to classify buildings and their elements, the elementary costs related to different ways of executing the works, and so on. Actuarial calculation schemes will be introduced to evaluate cost-efficiency, but taking into account Heritage values, which entail evaluations, and strategies, thus different from the ones adopted for building stocks which have an already planned service life.

The actors of the various conservation cases in this project are operating simultaneously on several levels, trying to solve specific conservation matters according to conservation principles, as well as designing conservation projects according to all-embracing local/regional development policy. In WP7 the decision-making processes will be followed continuously with questionnaires and some key actors will be interviewed more in-depth. Particular attention will be devoted to policies, values, facts, resources, legal frameworks and actual practices. Buildings and projects can be described in terms of intrinsic as well as extrinsic values, in value-in-use as well as value-in-trade. The actors are mediating between particular detailed conservation issues determined by their resources and activities, but also by their universal concept: their values and current policies. This act of mediation involves the assumption of an ultimate responsibility for judgement from the side of the participating actors.

Research on such comprehensive schemes as in WP3, WP4, and WP5, based on cross-sectoral cooperation with a multi-problem oriented approach, demands the use of hybrid methodologies and boundary-spanning, trans-disciplinary and multi-dimensional theories. The schemes are organized as joint ventures between various actors and the multi-stakeholder collaborations also include representatives from trade and industry, academic society and the civic sector. Research on this

comprehensive regional joint venture and on finding an adequate way of studying the manifold relations and judgements involved – between different systems of policies and values – requires an interdisciplinary theoretical approach, connected to meta-modelling discourses and based on several disciplines, with wide perspectives dealing with sustainable development.

As the field work is carried out with the associate partners, knowledge transfer will start already during the research activity, at least for prototyping procedures and tools. For dissemination of project results, different means will be adopted, in order to reach different stakeholders taking into account their different interests, behaviours and expectations. Technical reports will be made available as open access publication, deposited in an institutional repository, following ERC Scientific Council Guidelines. Websites and social media will be used to convey messages to the broader public.

The proposed research definitely challenges the borders of several disciplines. It can be defined multidisciplinary, in the sense that the partners will contribute the skills of their own disciplines, calling other disciplines to observe and to discuss, mixing external and internal points of view. The partnership has been built sharing the need for innovation, the curiosity for a new paradigm, and the awareness of the need of sound competences in multiple fields, spanning from technical disciplines to Economy of Heritage. The action research which is large part of the work will put into action this attempt to analyse phenomena from a multiple point of view, according to the need to understand preservation process and preservation system beyond the traditional disciplinary constraints.

4. SCIENTIFIC RESULTS AND RECOMMENDATIONS

Following the JPI-CH Strategic Research Agenda:
see pages 11-13/44 of Final report of CHANGES project submitted to Joint Program Initiative Cultural Heritage and Global Change – Heritage Plus Call

5. DISSEMINATION AND VALORISATION

See: <http://www.changes-project.eu/>

See pages 20-24/44 of Final report of CHANGES project submitted to Joint Program Initiative Cultural Heritage and Global Change – Heritage Plus Call.

6. PUBLICATIONS

See pages 25-36/44: Scientific publications (see Annex) and pages 37- 40/44 List of other scientific outputs (see Annex) of Final report of CHANGES project submitted to Joint Program Initiative Cultural Heritage and Global Change – Heritage Plus Call)

7. ACKNOWLEDGEMENTS

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ANNEX

Final report of CHANGES project submitted to Joint Program Initiative Cultural Heritage and Global Change – Heritage Plus Call, Submitted 31/05/2018, 44 p.