

Preventive conservation of historic buildings.

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Preventive Conservation is argued to improve preservation of heritage at large. The UNESCO chair on Preventive Conservation, monitoring and maintenance of monuments and sites (PRECOM³OS)¹ has pushed research and collaboration to understand the nature of preventive conservation in the field of built heritage. These exchanges help to gradually gain a better insight into the nature and benefits of preventive conservation.

In the built heritage field Preventive conservation seems to be understood differently than in the field of archaeology and the conservation of museum objects. Using the analogy with the world of medicine (an analogy often used in the conservation field) helps to understand more fundamentally what preventive conservation stands for. This contribution therefore will investigate whether this comparison cannot help to understand the systemic nature of preventive conservation. An analysis of practices in Flanders shared within the PRECOMOS UNESCO chair network helps to illustrate this point of view that deserves further investigation based on this concept.

Preventive Conservation: a definition

There is a certain tradition in dealing with preventive conservation in various heritage fields. Looking at analogies and differences a better definition can be drawn that applies to the field of built heritage.

In **archaeology** the term “preventive conservation” is used to express activities that aim at safeguarding and documenting sites urgently when major (infrastructural) works are planned on them which will make the site soon inaccessible. In this sense it is linked to rescue archaeology. The preventive nature of these actions relates to the risk for the possible loss of data or the risk for leaving archaeological findings “forever” inaccessible or undocumented.

In **musea** where movable heritage is conserved, there is a vast experience with preventive conservation. It deals with the conservation of objects for which an optimum (micro) climate can be created to assure optimum preservation conditions. The International Council of Museums (ICOM), the International Centre for Conservation in Rome (ICCROM), the Getty Conservation Institute and some others have been dealing with this approach have contributed to defining up to date standards for climate (control) for preservation of objects. A significantly wider background on that approach is available in the writings of, amongst others, Robert Waller (Waller 1995, 2003). He defined an approach based on risks and identified ten agents of deterioration that explain the threats that jeopardize the conservation of heritage objects. The definition of preventive conservation issued by ICOM-CC (New Delhi 2008) states and used in the field of movable heritage reads as: “Preventive conservation (are)- all measures and actions aimed at avoiding and minimizing future deterioration or loss. They are carried out within the

¹ See precomos.org

context or on the surroundings of an item, but more often a group of items, whatever their age and condition. These measures and actions are indirect – they do not interfere with the materials and structures of the items. They do not modify their appearance.”

These approaches differ from dealing with **historic buildings and sites** as (preventive) conservation in this case does usually not allow to change or optimize the environmental conditions, as climatic conditions or exposure to earthquakes, in which the object have to be preserved. Neither is it possible to limit measures to those that “... do not interfere with the materials and structures of the items. ... do not modify their appearance” as the ICOM definition states. It is also clear that the circumstances for (preventive) conservation are not limited to responding to urgent actions that threaten historic buildings or sites to disappear. Above that the overall aim of preservation of built heritage is to preserve as much as possible the different heritage values within its social context.

The attention for prevention and maintenance in the field of conservation of monuments and sites is not recent although it is gaining attention. The Charter of Athens (1931), article 4 of the Venice Charter (1964), the recommendations from the Council of Europe (Council of Europe, 1981) on Maintenance, preventive actions and crafts (1980s) but also the Burra charter refer to the role of maintenance for heritage and society (Cebon 2008). A few common denominators can be found in the arguments given in these documents: preventive conservation helps conserving authenticity as it avoids or minimize the increase of damage thanks to early maintenance and –if necessary- some interventions. From this it is usually deduced that preventive conservation is cost effective. The use of buildings and the proper integration in society enhance the chances for good maintenance. Experiences with monumentenwacht in The Netherlands and in Flanders support the arguments that a preventive conservation approach empowers society at large to take care of its heritage by maintaining it. It is also found that it widens the responsibility for preservation to a larger fraction of society than traditional conservation practices do.

Preventive medicine a source of inspiration.

In the field of heritage preservation the “medical analogy” is often used to explain methods and approaches. Most practitioners agree that prevention is better than cure, an expression that is used in daily life related to health as well.

Yet in 1971 in a publication on preventive medicine dr. Pierre Mercenier (Mercenier 1971) questioned whether “Preventive Medicine” or “Public Health” is a remedy for all diseases or a requirement in health policy. The article aimed at understanding the limits of curative medicine and investigated the way how the sequential barrages towards preventive medicine application could be overruled. It builds on the general accepted statement that “Prevention is better than healing”. It questioned whether preventive medicine should replace curative medicine and whether the one is in opposition with the other. It also argues that preventive medicine is about promotion of health.

Preventive medicine identifies different levels of prevention; which over time have been identified slightly differently when comparing the previously mentioned article with that of R. S. Gordon in 1983 (Gordon 1983). The first author identifies two levels of prevention while the second identifies three

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levels. Primary prevention refers to means to avoid the causes of the unwanted effect (degradation of health). Secondary prevention refers to means of monitoring that allow an early detection of the symptoms caused by unwanted effects. Finally tertiary prevention refers to means that allow avoiding further spread of the unwanted effect or the generation of new unwanted (side) effects.

According to dr. P. Mercenier the means available to implement primary prevention are “environmental hygiene”, “vaccination”, “personal hygiene”, “preventive medication” and “selection of individuals at elevated risk”. According to the same author secondary prevention uses systematic screening (in the above mentioned definition of 1983 this is secondary prevention) leading to interventions that avoid spreading of the unwanted effect. The latter is according to R.S. Gordon, referring to tertiary prevention.

Curative medicine is seen as an ultimate (third) “barrage” that can be put at work eventually. Indeed, if prevention does not work there still may be the possibility to cure, which according to dr. P. Mercenier should be seen as a defeat; as the aim of prevention is to avoid cure!

About “systematic screening” (monitoring) the author states that this activity is mere “diagnosis” than “treatment” contributing to precocious treatment when needed. It should be linked to “health education”. He also argues that screening in preventive medicine or public health activities can result in a negative connotation in some specific conditions. The cost (not limited to economic cost, it may also include societal cost) of screening can be too high compared to the benefits that result from it. Screening sometimes leads to difficult decisions considering it may also bring up false negatives, false positives. Screening sometimes result in psychological and social damage which may come at a higher cost than the purely medical advantage, ... The actual debate on handling Ebola within the international scene brings up this kind of ambiguities.

Prevention in the medical profession

A description of the particular characteristics of the preventive approach in the medical profession (Mercenier, 1971) helps to better understand the concept of prevention in the heritage field.

Professionals in the field of curative medicine are trained to see the patient as the demander of the care (Mercenier, 1971). In preventive medicine or public health it is the medical system that provides a service to the individual or to society. To be able to act according to public health aims, professionals have to be trained to think in terms of risks and to understand, and to make understandable, that the direct effect of prevention is not sensible at short term. As, to be effective, a large part of the population or at least of the group of more vulnerable part of the population has to be reached, therefor professionals have to think in term of society and not in term of individuals (Mercenier, 1971).

As often the (visibility of the) advantageous effects of preventive measures are delayed, this may cause a problem of choices. Today people –definitely politicians- tend to choose for the fastest result. Therefor to convince people to implement preventive conservation its delayed results have to be compensated by the superiority of the results of curative actions, which partially explains the lack of interest in prevention (Mercenier, 1971).

In medical care there are three conditions for the implementation of a prevention approach (Mercenier, 1971):

1. The availability of scientific knowledge to understand the “causes” and to understand the psychological –sociological and economic context (of well-being). Therefor to be able to implement such programs effectively, research is needed.
2. There should be properly trained professionals.
3. The required preventive medical services (the system!) should be available.

How can those findings from the public health sector be “translated” to the heritage field?

Lessons learned from preventive medicine or public health for preventive conservation.

The first striking finding is that in the medical world when using the words “public health” and “curative care” these words cover the meaning of the “good state” versus the action to “recover”. The meaning also covers the “public nature” of taking care of health. In the conservation field we have no word that expresses that “good state”. We could use the word “health” in a wider sense and talk about “heritage health”, as is done in the engineering field, e.g. in the field of “structural health monitoring”.

Some of the concepts used in public health have yet found their way to the field of built heritage management.

In 2010 Prof. Stefano della Torre (della Torre 2010) identified that preventive conservation should be based on three levels of prevention using analogies with medicine. In line with Gordon (Gordon 1983), three levels of prevention can be defined:

1. Primary prevention relates to means and measures that aim at avoiding the causes of the unwanted effect (loss of heritage values or damage) to act;
2. Secondary prevention relates to means and measures of monitoring that allow an early detection of the symptoms of the unwanted effects (loss of heritage values or damage);
3. Tertiary prevention relates to means and measures that allow to avoid the further spread of the unwanted effect (loss of heritage values or damage) or the generation of new unwanted effects (loss of heritage values or damage).

Prof. S. della Torre (della Torre 2010) has clarified that in conservation of built heritage primary intervention starts with assuring the proper use of the building, besides other types of preventive measures as assuring good air quality and good state of maintenance. It should also include a good integration of the heritage in society as to avoid vandalism or neglect and it should be rooted in the regional context.

The importance of the efficacy of monitoring (secondary prevention) has been addressed various times within the meeting organized by the PRECOM³OS UNESCO chair and its network. Monumentenwacht in The Netherlands (www.monumentenwacht.nl) and in Flanders (www.monumentenwacht.be), that help owners and site managers to have a regular and reliable updated report on the state of preservation, are given as valuable examples of good practices (Stulens 2002) (Verpoest 2006). More than 20 years of

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Monumentenwacht experience in The Netherlands² and in Flanders³ have been able to demonstrate that “prevention is better than cure”. Referring to the comments give on the article of dr. P. Mercenier, monitoring should not really be considered a treatment but mere a diagnostic tool. The application of such monitoring tools, as we learned from the medical analogy, should consider a balance between time and resources for analysis and for monitoring versus the speed of decay progress. It should understand the risks and traps of screening systems (e.g. false negatives, false positives) when conclusion are taken. Similarly as in medicine, monitoring should also been seen it its relation to education and awareness building. It can be noticed that this is exactly one of the main objectives of monumentenwacht beside monitoring the state of maintenance: to sensitise and inform their members and society at large about the importance of monitoring and maintenance.

Another relevant organism that contribute to the systemic approach in many earthquake prone regions are organizations as “Civil protection” or “fire brigade”. In Italy for example, the Civil protection had a major contribution in understanding the possible risks and impacts of earthquakes on heritage and they also developed emergency measures in case of earthquake events. Civil protection can be considered part of a preventive conservation system as it exists independently of the “individual” need for repair of a monument, at the condition that it has expertise of dealing with the specificities of heritage. In some countries as Italy, this organization has developed this expertise. In other countries such organizations may lack the required sensibility for built heritage.

A state of the art of the understanding and implementation of preventive conservation has been shared in previous contributions (Van Balen 2013) (precomos.org) (sprecomah.eu).

With the study of the experiences in medicine along with the identification of some actual problems in the implementation of preventive conservation, however, it seems that our concepts may so far have been too fragmented.

In analogy with what was mentioned in the preventive medicine literature three conditions for the implementation of a prevention approach can be given. Firstly scientific knowledge should be available to understand “causes”, to understand the socio- economic context. To be able to implement such programs and their efficacy operational research is really needed. Secondly there should be properly trained professionals and finally the required preventive services (the system) should be available

Related to the first point, the activities of the Seminars on prevention conservation of the architectural heritage “SPRECOMAH”(sprecomah.eu)(precomos.org), the activities within the PRECOMOS UNESCO chair as well as diverse initiatives developed by its members have helped to boost the creation of scientific knowledge in the field, however still a lot is to be done. In the field of movable objects, as explained earlier, there is yet more research and applications of preventive conservation. However we would like to argue that the approach is still very much object based, concentrating a lot on climate control and that it lacks a system approach.

² www.monumentenwacht.nl

³ www.monumentenwacht.be

The experience of the involvement of Civil Protection in Italy (Modena 2010) shows how this organization can be involved in emergency care but at the same time can contribute to preventive care by coordinating damage assessment and learning from past earthquake events.

The analogy with medicine instructs us that most of the professionals in the field of curative heritage conservation are trained to see “the monument or isolated site” as the demander of the care. In preventive conservation or (public) “*heritage-health care*” it is the system that should provide all necessary service to the individual building or to heritage building stock. Thus professionals have to learn thinking in terms of risks and to understand -and to make understandable- that the direct effect of prevention is not sensible at short term. As, to be effective, preventive conservation should address a large part of the heritage stock or at least of the group of more vulnerable heritage buildings. Professionals also have to learn thinking in term of the “heritage building stock” (society) and not in term of separate buildings or sites (individuals) and therefor professionals should be trained to think in terms of risks and to address them in a systemic, integrated way.

As a consequent it seems that an attempt should be made to develop a “(built) Heritage’s health care system” that is effective. Such a system should assure a good health for the heritage “stock” as a whole and should be less concerned with resolving individual needs only. It will not be easy to introduce such a system and to make it acceptable due to the delayed perception of the advantageous effects of preventive measures. As today people and decision makers tend to choose for the fastest result, the delayed results of preventive measures should be compensated by the superiority of its outcomes above the results of curative actions. The objective elements that help making the choice for preventive conservation strategy are often difficult to define by lack of convincing examples, which explains partially the lack of interest for prevention. However the experience Monumentenwacht in Flanders (Monumentenwacht Vlaanderen 2010) gives a good ground to evidence the superiority of such a system after almost 25 years. Monitoring and follow-up maintenance actions by the owners based on the report of Monumentenwacht during those years has for example resulted in an improvement of the state of preservation of the gutters and roofs of the stock of monitored heritage buildings in Flanders. More evidences may still be needed to make a more convincing case.

It could be argued that thanks to the existence of Monumentenwacht in Flanders a preventive conservation “system” exists. Although there is a monitoring organization (Monumentenwacht), there is an adapted legal framework and there are incentives (e.g. maintenance grants; some of which have recently been replaced by mere oppressive measures) the system is incomplete. One of the bottlenecks that has been identified in a survey carried out by Monumentenwacht Vlaanderen (Monumentenwacht Vlaanderen 2010) is the lack of available companies that can carry out maintenance work or small restoration work based on the reports of monumentenwacht. The lack of trained craftsmen and the lack of integration of related activities in the local economy contribute to that bottleneck.

Therefore, although the prevention approach seems advanced in Flanders, we conclude that the systemic approach is not sufficiently developed or understood to have a fully working preventive conservation system available for immovable heritage in Flanders. Similarly we argue that in a country

as Italy which has a civil protection organization that is rather well developed, the existence of such an organization is not sufficient for a preventive conservation system.

Preventive conservation is complementary to curative conservation and both should be integrated in a system of promotion and support of “heritage health”. Similarly as in medicine preventive conservation should always prevail, keeping in mind that curative action –in a way- is always a defeat. Indeed the reasons to implement preventive conservation are: 1/ the improved preservation of heritage values, 2/ the cost-effective nature of maintenance and 3/ the involvement of a larger part of the population is in the process. Indeed in the case of preventive conservation the responsibility for follow-up and for repair actions is much more local which involves more people.

In line with preventive medicine we may argue that preventive conservation is a requirement in a heritage health policy and should have priority before curative conservation.

Conclusions

The concept of preventive conservation of monuments and sites is gradually unveiling itself through studies of concepts as well as through evidence based studies on the topic. Comparison with the field of medicine and more particularly with public health, helps to understand the nature and the potential outcome of preventive conservation strategies. An integrated or systemic approach should help to implement them based on a different mind-set and based on the (political) will to accept that investments and efforts will take some time to “show off”. This embryonal research on the fundamental properties of preventive conservation and its possible contribution to the protection of historic buildings in the wake of an earthquake entails an invitation to researchers and practitioners to share more research and experiences based on this concept. It is envisaged that at the long run it will contribute to an improved preservation of heritage values and a better contribution of “healthy heritage” to the well-being of communities.

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