Cities 94 (2019) 24–32

Contents lists available at ScienceDirect

Cities

journal homepage: www.elsevier.com/locate/cities

An evaluation of decision-making process on maintenance of built cultural heritage: The case of Visby, Sweden

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ABSTRACT

Preventive conservation is a significant approach for the conservation of built cultural heritage. This approach aims to prevent major deteriorations through monitoring and a planned maintenance programme. Although Visby, as one of the most important world heritage sites of Sweden, has many governmental organizations for conservation, none has a particular focus on maintenance. This paper examines the perspective of the habitants about the maintenance of their dwellings in the World Heritage Site of Visby. In this context, a survey is carried out to determine the main tendency of the habitants regarding the maintenance of historic buildings inside the city walls. Thus, the survey requires not only quantitative methods based on statistical data, but also qualitative methods based on interpretative data. The questionnaire conducted with the owners and tenants is the primary data collection tool. Both the owners and the tenants agree with the necessity of a non-governmental organisation in Visby to provide advice on maintenance. Maintenance and regular monitoring prevent costlier and large-scale repairs and are essential to retaining the cultural significance of Visby. This study can be helpful for adopting the community's opinion to the regular maintenance programme and promoting cooperation between non-profit organizations and governmental organizations in cultural heritage.

1. Introduction

Conservation of built cultural heritage is based on a planned preventive process with a long-term vision. Thus, the process cannot be regarded as a single action towards conservation (Van Balen, 2015). On the contrary, it should include numerous planned activities. Depending on the long-term requirements of the process, the best definition of *planned conservation* is "the care of co-evolutionary potentialities" because built cultural heritage continues to change and conservation must adapt to the changes (Della Torre, 1999). In addition, *regular maintenance* for buildings was first expressed by John Ruskin and William Morris, founders of the "Society for the Protection of Ancient Buildings (SPAB)" in 1877. It is defined as "the most practical and economic form of preservation". This approach was improved by Giovanni Urbani with the Italian "conservazione programmate" in 1975. The concept also has the same background with *integrated conservation* that was characterized by the Council of Europe in the same year (Della Torre, 2013).

Built cultural heritage is exposed to various deterioration problems that can be caused by physical, chemical, natural and human actions. Furthermore, unusual environmental conditions like earthquakes, floods and fires, as well as, weather conditions like rain, sun, snow and wind generate problems in the conservation of cultural heritage. Air pollution, biological causes, humidity and vandalism are also important problems (Ortiz & Ortiz, 2016). Recently, preventive conservation was regarded as an efficient endeavour against the problems experienced in the conservation of cultural heritage (Van Balen & Vandesande, 2013). According to the European Committee for Standardization (CEN), *preventive conservation* is the "measures and actions aimed at avoiding or minimizing future damage, deterioration, loss and consequently, any invasive intervention" (European Committee for Standardization, 2011). It aims to understand the threats and the current conditions of the heritage to prevent major deteriorations and extend building life span (Ortiz & Ortiz, 2016). Although preventive conservation is already applied in various heritage fields such as archaeology, museums, and historic buildings and sites, the concept has also been adopted for built cultural heritage (Van Balen, 2015). However, the process for built cultural heritage differs from other heritage fields. Even though the conservation of an object can be maintained by optimizing its environment, the same case does not apply to every built heritage site. In addition, the process requires the determination of the economic impact on the sites, community involvement and political concern (Della Torre, 2010; Van Balen & Vandesande, 2013; Van Balen & Vandesande, 2015a; Van Balen & Vandesande, 2015b). Based on all these factors, preventive conservation is gradually being promoted in several heritage sites across the world.

Visby, one of these heritage sites, is a medieval city that is located on the island of Gotland in Sweden. It was the centre of the Hanseatic League in the Baltic Sea between the 12th–14th centuries. It is

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https://doi.org/10.1016/j.cities.2019.05.030
Received 19 February 2018; Received in revised form 15 May 2019; Accepted 25 May 2019
Available online 01 June 2019

surrounded by ramparts constructed in the 13th century and hosts more than 200 warehouses and dwellings that inherit from the same century. Visby was included in the World Heritage List by UNESCO in 1995 owing to these architectural, cultural and natural features. Although it is described as "the best-preserved fortified commercial city in northern Europe" by UNESCO, nowadays the settlement is a tourist attraction where people mostly live during the summer. Thus, seasonal usage of the city might increase the risk of deterioration in the historical buildings. On the other hand, there is an opportunity for an organisation providing monitoring and regular maintenance based on community involvement in Visby. Regular maintenance approach adopted by several international and European organizations can be an opportunity for retaining its cultural value. This approach has many positive outcomes not only for Visby but also for settlements suffering from similar social, physical and economic problems. It ensures the long-term preservation of historic buildings with less cost for owners. It fosters employment with the help of cultural tourism, thereby empowering the local community.

This paper examines Visby as a case study and how its characteristics can be preserved and maintained through preventive conservation. It focuses on regular maintenance as a tool for preventive conservation to examine the community opinion about maintenance and the existence of a guiding organisation for regular maintenance, such as English Heritage, SPAB, National Trust for Scotland and Monumentenwacht. However, the study differs from existing studies in various aspects and contributes to the literature. One of these aspects is the well-preserved case area located on an isolated island. It was designated as a UNESCO World Heritage Site. In addition, there is already a non-profit organisation in Visby founded by the local community for the conservation of the historic built environment. The existence of such an organisation can be described as a rare situation in Sweden, as well as, across the world.

2. Maintenance as a tool for preventive conservation

Although maintenance is a new approach in the field of conservation, conservation of buildings with regular maintenance was suggested in mid-nineteenth century by John Ruskin and William Morris. Morris defines *maintenance* as "a method for preserving the values of historic fabrics and combatting possible deteriorations by means of daily care" (Society for the Protection of Ancient Buildings, 2008, p. 1).

The significance of historical building maintenance has been internationally acknowledged with legislative frameworks and charters. The Venice Charter (ICOMOS, 1964) states the importance of maintenance in Article 4: "It is essential to the conservation of monuments that they be maintained on a permanent basis" (International Council on Monuments and Sites, 1964, p. 1). Furthermore, the Burra Charter (ICOMOS, 1999b) describes maintenance in Article 1 as "continuous protective care of the fabric and setting of a place and is to be distinguished from repair." It also discusses maintenance in the process of conservation, on which Article 16 states "maintenance is fundamental to conservation and should be undertaken where fabric is of cultural significance and its maintenance is necessary to retain that cultural significance" (ICOMOS, 1999a). Unlike restoration or reconstruction, the objective of maintenance is preventing costlier and larger-repairs with minimal intervention. The scope of minimal intervention can be "as much as is necessary" (Brereton, 1995, p. 7; Watt, 1999, p. 234) and "as little as possible" (Feilden, 2003, p. 235) that will not decrease the significance of the building.

Although the importance of maintenance is accepted worldwide, there are still problematic points that need to be ameliorated in current conservation processes. The root of many of these problems is a lack of direction and promotion of maintenance (Maintain Our Heritage, 2004, p. 9). The lack of a certain policy leads to the misinterpretation of maintenance as *repair* (Forster & Kayan, 2009). According to the Burra Charter (International Council on Monuments and Sites, 1999a, 1999b), maintenance means "the continuous protective care of a place and its setting. It is to be distinguished from repair which involves restoration or reconstruction." In addition, repair is defined as "actions applied to an object, or part of it, to recover its functionality and/or appearance. It is a restoration action only if it respects the object's significance and is based on evidence," by the European Committee for Standardization (CEN, 2011). Thus, most of the current strategies are mainly based on "activity plans" rather than long-term plans. Within this context, long-term plans also involve monitoring in addition to short-term activity plans (Van Balen, 2017). Van Balen (2017) claims that monitoring is based on changes occurring over time, and it aims to update the records and documents regarding the heritage. Therefore, documentation should be conducted systematically for effective monitoring and preventive conservation.

In recent years, some researchers have tried to develop effective documentation methods to report the situation of buildings and sites within the scope of preventive conservation. "Innovative Built Heritage Models" can be described as a summary of actions internationally related to preventive conservation. It is based on the international conference on CHANGES (Belgium, 2017) and aims to provide an international overview of the existing strategies, processes and operational case studies that support the implementation of preventive and planned conservation in the built heritage sector (Van Balen and Vandesande, 2018). It is significant in terms of increasing awareness about preventive conservation among researchers and promoting the concept across the world. Among these studies, Boniotti emphasized the need to promote collaboration among local actors as decision-makers, and Bossi investigated the activities of some restoration companies within the framework of preventive and planned conservation strategy. Based on interviews with shareholders, the study demonstrated actual tendencies and practical challenges in the built heritage market and emphasized the role of restoration companies in the popularization of preventive conservation (Boniotti, 2018; Bossi, 2018).

There are also studies on the evaluation of existing monitoring and maintenance systems through non-governmental organizations, such as Monumentenwacht (Heinemann & Naldini, 2018). Monumentenwacht, which has been active for more than 40 years in the Netherlands, is an organisation that supports conservationist management of built heritage. The study results based on activities of Monumentanwacht showed that the organisation could be accepted as main advisor and shortcut for direct connection with the contractor in conservation works. In the study examining the effect of Monumentenwacht on the maintenance behaviour of owner-managers of built heritage for seven case areas in Flanders, maintenance practices were detected based on social research methods, a technical analysis and a statistical analysis (Van Roy, Verstrynge, Vandesande, & Van Balen, 2018). The study results revealed that owners took the severity of damages reported by Monumentenwacht into account when they decided on maintenance actions. However, their actions were also influenced by practical considerations.

In addition to preventive conservation programmes organized to identify the general conservation trends and problems worldwide, there are also some attempts to create pilot regions to establish preventive conservation approach. Within this context, Gustafsson and Ijla introduced the Halland model named after a regional joint venture in the region of Halland in Sweden as an approach to activate building conservation. This model is mainly based on a local network among the construction industry, the historic built environment sector, real estate owners, local and regional authorities, and trade unions. According to this model, historic buildings at risk can be saved from demolition through collaboration. In addition, this model allows new job opportunities to be created, while a younger generation is trained in craftsmanship to preserve traditional techniques (Gustafsson & Ijla, 2018). Similarly, another project focused on creating short-term job positions in the conservation sector in Slovakia. The project had a positive effect not only on decreasing the unemployment rate in the region but also on

integrating unemployed people into the process of heritage conservation, and building up a strong attachment to cultural heritage, regional traditions and local cultural values. Thus, cultural heritage also becomes more attractive for tourism by creating opportunities for more employment in the service sector (Izvolt & Smatanova, 2014). In a similar fashion, Valtellina Cultural District in Italy was investigated by Foppoli. The aim of the project was to involve cultural landscape, heritage, awareness of local community, strategic development forecast and creation of tangible or intangible networks in conservation works. The analysis aimed to identify the strengths and opportunities that have been provided to the territory in addition to the weaknesses and threats in the development process (Foppoli, 2018).

Ferreira examined the Portuguese experiment, the Romanesque Route, as a real European implementation case study. The study reported that preventive conservation was increasingly successful when it was linked with the empowerment of local communities and users (Ferreira, 2018). In addition to the recent conservation activities in Europe, Cuenca in Ecuador was examined as a case study by Avila and Andrade, where they conducted a comparative analysis between the methodology used in Cuenca and the rest of cities in Latin America. This study is significant in terms of being the first assessment of the sample works in the region. The results showed that the lack of long-term vision and regular maintenance could cause loss of historic structures and increase gentrification. The authors concluded that the effectiveness of such changes in the built heritage is largely determined by the clear establishment of stakeholder roles (Siguencia Avila & Vintimilla Andrade, 2018).

3. Non-profit organizations on maintenance

The main objective of the non-profit organizations that have been established in several European countries (e.g. Netherlands, Belgium, Denmark, Germany, Austria and Hungary) is to give advice to owners of historical buildings about systematic preservation and maintenance of their properties.

Monumentenwacht can be mentioned as the leading organisation among non-profit organizations that support management of built heritage. It was founded in Netherlands in 1972, but today it operates in several European countries. It works with a bottom-up approach and voluntary membership. The organisation with more than 5000 members is not part of any government; therefore, its supervision is completely private. While half of the buildings that they provide consulting service listed as a residential building, they are also interested in other types of structures, such as churches and public buildings. The organisation policy requires a condition survey compiled by experts to report the building's state as part of the application dossier and encourages owners for further membership (Quintero, Stulens, Addison, & Pletinckx, 2008).

The study results based on activities of Monumentanwachten showed that the organisation could be accepted as a main advisor and shortcut for direct connection with the contractor in conservation works. In the study, examining the effect of Monumentenwacht on the maintenance behaviour of owner-managers of built heritage for seven case areas in Flanders, maintenance practices were detected based on social research methods, a technical analysis and a statistical analysis (Van Roy et al., 2018). The study results revealed that owners took the severity of damages reported by Monumentenwacht into account when they decided on maintenance actions. However, their actions were also influenced by practical considerations.

Monumentenwacht operates in two stages. The first stage aims to stop decay with immediate action by providing regular condition surveys on the buildings, while the main objective of the second stage is to generate a gradual change of mentality through information and sensitization (Quintero et al., 2008). The organisation offers their services to owners with as low a cost as possible due to their non-profit background. They obtain 25% of their total budget from the Flemish government, 65% from the provincial government and only 10% from inspection fees (Quintero et al., 2008).

As a summary, this system provides low-cost warning system and thus prevents large-scale restorations. It works as a voluntary foundation and offers non-restrictive way to the owners. The first aim is to preserve cultural heritage instead of making a profit. It is not just for monumental buildings; it contains all type of structures. In addition, it creates new employment opportunities in cultural heritage sector. However, non-profit organizations like Monumentenwatch, have largely failed in various countries without government subsidies and financial assistance. Not being a part of the goverment could cause ecenomical issues. The other disadvantage of the organisation is that owners are not obliged to follow the advice given by organisation, so all inspections can remain as just a condition report. Even if it is not, application process for the maintenance could take a long time.

Besides all these advantages and disadvantages of the system, the regular monitoring policy adopted by Monumentenwacht is considered as significant by international organizations. The importance of its role and contribution to the cultural heritage were stressed several times in the meetings organized by UNESCO, and many Monumentenwacht works in Netherlands and Flanders were presented as valuable examples (Stulens, 2002; Stulens & Verpoest, 2006). According to results of these meetings, people and decision makers generally have a tendency to choose the fastest and the easiest solution, which can potentially lead to more extensive restoration works. Therefore, it is important to popularize monitoring and regular maintenance for preventive conservation.

4. Current approach of heritage conservation in Visby

Visby is a city that is located on the Island of Gotland in the middle of the Baltic Sea. It was the main centre of the Hanseatic League founded in 1150 which comprised Lübeck (Germany), Tallinn (Estonia) and Bergen (Norway) in addition to Visby. However, excavations revealed the existence of a trading settlement dating to the Iron Age and early Viking Age. Due to its commercial importance, it was exposed to war for many years. In 1288, the civil war between farmers and traders in Visby induced the construction of the city walls (Fig. 1). In addition to civil war, the city suffered from Danish attacks in the middle of the 14th century and was returned to Sweden in the middle of the 17th century. Although some parts of the medieval city wall, towers and churches were damaged by wars, the majority continue to exist today. A town plan was established in the 19th century, preserving the existing appearance of the town and building a garden on the outside of the walls (ICOMOS, 1995). In 1973, the town was declared as an environment with historical and cultural value. In 1987, a conservation area of 77 ha was designated with the new “Building and Planning Act,” including the 485 listed buildings (Fig. 2). Following the declaration of the conservation area, recommendations and guidelines were developed within the preservation policies of the municipality for different municipal bodies and property owners for reparation and rebuilding in 1989. After documentation, a maintenance programme was created for each property in the conservation area. As a result of the successful preservation policies, Visby was included in the World Heritage List in 1995 as “the best-preserved fortified city in Northern Europe” (ICOMOS, 1995).

Currently, there are five governmental organizations responsible for heritage conservation in Visby: Swedish National Heritage Board, Region Gotland, The County Administrative Board, Gotlands Museum and Visby World Heritage Site Committee.

Swedish National Heritage Board is affiliated to the Ministry of Culture and has served, since the 17th century, as Sweden's central administrative agency for cultural heritage protection and management in a democratic and sustainable way (Swedish National Heritage Board, 2017). Region Gotland is the new name of Gotland Municipality adopted in 2011. Regional development is one of the main tasks of

Fig. 1. A view of Visby from the outside of the city walls.

Region Gotland, and the Town Planning Committee, under the auspices of Region Gotland, is responsible for detailed and overall planning, building permits, environment and health protection (Region Gotland, 2017). The County Administrative Board's main goal is to provide a good living environment that is sustainable in the long-term and to preserve the county's cultural environment. The Board has three main tasks: issuing maintenance permits in the vicinity of an ancient monument, designating protected building and developing guidelines for building preservation (County Administrative Board, 2017). Gotlands Museum has an important consultancy role in building preservation from the beginning to the post-check of conservation projects (Gotlands Museum, 2017). The World Heritage Site Committee has a great responsibility in retaining the cultural significance of the Hanseatic Town of Visby since its declaration as a World Heritage Site in 1995. In addition, there is a non-profit organisation called Visby Innerstadsförening with approximately 400 members. Visby Innerstadsförening aims to create healthy living conditions in the inner city of Visby. Although the organisation comprises academicians and architects, it mostly focuses on connecting inner-city habitants with governmental organizations. In addition to assembling the citizens, the organisation provides guidance in solving their problems. However, citizens are required to apply to governmental institutions for permission before conducting any maintenance work on their historic houses. Nevertheless, the high number of members proves the need for such organizations that have a common interest in the inner city and provide practical support to citizens for the maintenance of their historic houses (Visby Innerstadsforening, 2017).

Although there are many governmental units mentioned above in Visby, there is not any non-profit organisation which adopts a holistic approach in the conservation of built heritage focusing directly on maintenance. Five governmental organizations mostly work independently, and it could cause longer intervention process for the cultural heritage. Also, necessity of taking a permission even in case a small intervention requires various steps that not to encourage the owners. Therefore, a non-profit organisation can have a positive impact on preventive conservation in Visby via the combination of existing

Fig. 2. A general view of the dwellings and church ruins.

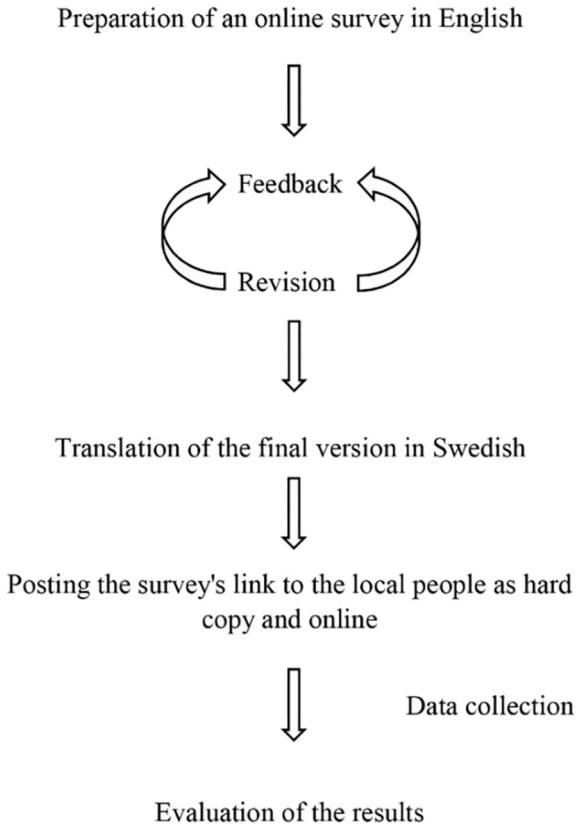

Fig. 3. Data collection schema.

organizations, public participation and governmental support.

5. Research methodology

Preventive conservation should involve public participation in its decision-making in addition to governmental strategies. Before deciding on the research approach, the researchers were aware of the need to take the social, cultural, economic and environmental impacts of the study into consideration. Therefore, this study required not only quantitative methods based on statistical data, but also qualitative methods based on interpretative data. The case study utilized questionnaires as the primary data collection tool to acquire a general understanding of the opinions of the owners and the tenants. The study data were analysed by computer to create charts for each question (Fig. 3).

Before administering the questionnaires, several different methods, as well as, the possible challenges for each method were determined as each method had advantages and disadvantages in terms of applicability. The first option was conducting an in-situ survey, but the survey and the evaluation of the results would have to be completed within the three-month winter period. Additionally, the owners/tenants might not be willing to answer the questions in person. The second option was giving the questionnaire form to the owners after a brief conversation, and then collecting them after a specific period of time. However, in this option, the possibility of not being able to reach the owners/tenants at their homes could have resulted in a waste of time for the researchers. Setting up a stand in a prominent public space was the third option, but it was difficult to reach an adequate number of people by this approach. The other option was creating an online survey, but the e-mail addresses of all the owners/tenants could not be obtained, and people might not take the e-mail into consideration. Thus, this option was improved with the addition of posting a letter to the owners. This method involved creating an online survey and sending a letter to the owners to inform them about the online survey and to provide the survey link. Notwithstanding the difficulty of finding the home addresses of all the owners/tenants and the potentially long wait time for responses, the last option was chosen as the most effective method. Informative letters about the online survey were posted to approximately 400 owners/tenants on the behalf of Uppsala University Campus Gotland. An anonymous online questionnaire was created with Google Forms. Questionnaire questions involved the current condition, conservation status and maintenance history of their houses. Furthermore, the respondents were not informed about preventive maintenance before a series of questions. This allowed the acquisition of accurate information as to what the concept of maintenance meant for the respondents. The questions were initially formulated in English and then translated into Swedish, thereby preventing a possible misunderstanding of the questions. Among others, an online questionnaire is the most reliable methodology due to anonymity and voluntariness. Moreover, this option had a more official aspect as the informative letters were sent by Uppsala University.

Although informative letters about the survey were mailed to all the addresses inside the city walls, only forty-five owners and tenants completed and returned the questionnaire. The main reason of this unexpected situation was that many property owners stayed on the mainland during winter. The general subjects that the questionnaire focused on were current use of the property, property status, duration of ownership/tenancy, educational background, employment form, completed restoration/renovation works, partial restoration/renovation works, last major restoration/renovation work, owning or living in a historic building, extent of preservation, knowledge about the protection status, legal preservation guidelines, importance of having a property in a World Heritage Site, maintenance frequency, maintenance works, tax reduction, purpose, planning and time of maintenance works, extent and source of maintenance knowledge particularly in terms of architectural elements and mechanical systems, and priorities of factors in terms of maintenance, as well as, how the citizens of Visby viewed the existence of an organisation that would provide regular reports on the condition and maintenance of their houses.

6. Data analysis

Depending on the participation was less than expected, the survey results represent the tendency of the habitants concerning the maintenance of the historical dwellings rather than the exact general view of the community. To analyse the tendency of all subjects mentioned previous section, Google chart tools, which offer interactive charts and data tools from simple scatter plots to hierarchical tree maps, were used as the primary analysis technique. In addition, all analyses were performed only on the basis of respondent replies.

The great majority of the buildings in the centre of Visby were being used as permanent residences (Fig. 4), while some buildings were used for vacations, especially in the summer. In winter, these buildings were generally rented to students who studied in Uppsala University, Campus Gotland. Shops and boutiques occupied only a small portion of the area. Most of the respondents owned their dwellings for more than twenty-

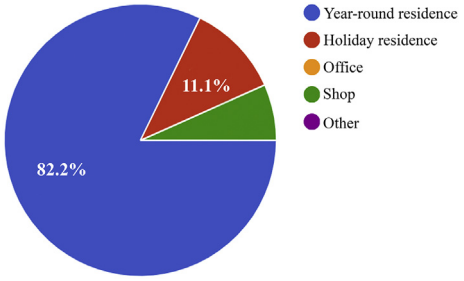

Fig. 4. Current main function of properties.

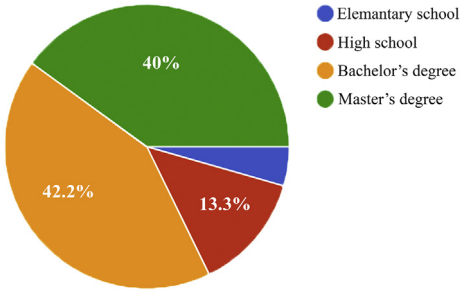

Fig. 5. Educational background of respondents.

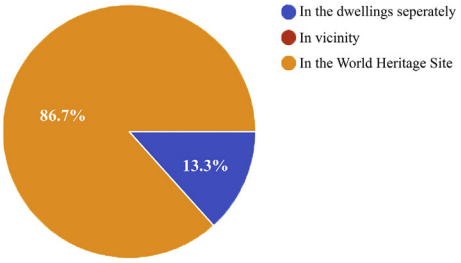

Fig. 7. Respondent opinions about the need for preservation at different levels.

one years. Tenants, mostly students who studied at the university, lived in only a small part of the inner city. Although the study was conducted in winter when most of the owners lived on the main land, the majority of the respondents were property owners through the benefit of the online survey.

The educational backgrounds of the respondents revealed that the locals who lived in Visby were well-educated. 42.9% of the respondents were university graduates and 40% had a higher degree (Fig. 5). Pensioners generally preferred to stay in the city, and the winter population of Visby comprised workers and self-employed people in addition to students. According to the results of the survey, most of the respondents regarded owning and living in a historical building as an asset and were knowledgeable about conservation policies and legal guidelines. While 51.1% of the respondents reported that their properties were listed, only 15.6% did not know the protection status of their properties. The respondents who were uninformed as to the protection status of the buildings were elementary school graduates and university students. Furthermore, the respondents who reported their buildings as listed also stated that these buildings were protected under an urban plan (Fig. 6).

Although the locals were theoretically aware of the significance of Visby and its preservation, they were not sufficiently conscious of the practical aspect of preservation. In terms of the scope of preservation, while 86.7% of the respondents agreed with the holistic preservation approach that encapsulates Visby as a whole, only 13.3% argued for the preservation of the buildings individually (Fig. 7).

In addition, 73.3% of the respondents had implemented a regular maintenance programme for their dwellings, while 26.7% had not. On the other hand, despite of the high level of education, 62.2% of the respondents, 75% of which had an undergraduate or graduate degree, claimed that maintenance should be performed only after encountering a problem. 85.7% of the owners had completed major restoration/renovation works for their dwellings recently, which indicates the negative outcomes of this misconception. Most of the major restoration works concerned paint, windows, facade, floors, roof, insulation/energy consumption, doors, ventilation and foundation, as well as, heating, electricity and plumbing/water drainage systems (Fig. 8). 45.2% and 41.9% of the last major restoration/renovation works were carried out 0–3 and 4–10 years ago, respectively.

The primary reason for maintenance was technical needs, and the owners preferred to have specialists solve the issue, depending on the type of the problem. In addition, the great majority of the respondents reported claiming tax deduction for the maintenance of their properties through *ROT*. *ROT* encompasses repair and maintenance works, as well as, conversions and extensions, and *ROT* works are tax deductible, provided that they are implemented in connection with a dwelling that the client owns and lives in. Weekends and spare times were generally preferred for conducting maintenance works. Property owners are required by law to apply for a permit for major restoration works and some repairs. Therefore, acquiring a permit was their priority for maintenance works. Then, they tended to plan the works according to time and cost. Almost half of the respondents chose to repair their own properties with traditional techniques and materials.

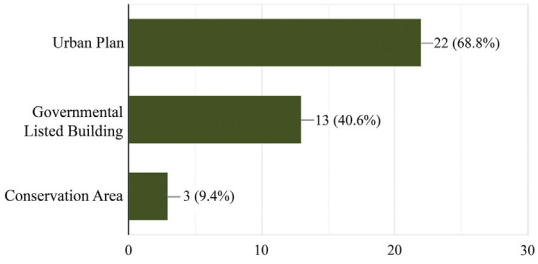

Fig. 6. Awareness of legal protection guidelines.

The respondents mostly reported learning about the maintenance of mechanical systems equally from professionals and craftsmen. However, they relied more on professionals than craftsmen for being informed about the maintenance of architectural elements. In addition, the authorities played a more important role in accessing information about the maintenance of architectural elements than mechanical systems (Fig. 9).

The locals reported other citizens, school, government authorities and printed materials, in order of popularity, as their source of information about maintenance (Fig. 10). Fewer people obtained this knowledge from non-profit organizations and retailers.

For existence of a non-profit organisation in Visby, 92% of the respondents supported the idea of providing consultancy in the maintenance of their properties, in addition to government authorities, professionals and craftsmen (Fig. 11). In addition, 83% of the respondents agreed that the existence of such an organisation would provide the owners with the benefit of a regular monitoring and maintenance for their properties to prevent costlier and large-scale repairs (Fig. 12). Furthermore, they preferred to consult the organisation as needed rather than receiving regular reports or brochures (Fig. 13).

7. Conclusion

Preventive conservation is an efficient method to ensure the survival of cultural heritage with planned maintenance programmes. Additionally, more costly and risky extensive restoration works can be avoided through diagnosis and repair of minor deteriorations in historical monuments. Although the significance of preventive conservation and maintenance has been recognised internationally thanks to many charters, there are still some problems in the conservation of cultural heritage regarding the provision of guidance for and the promotion of regular maintenance.

The World Heritage Site of Visby is an invaluable cultural heritage that dates back to the Iron Age and early Viking period. Therefore, maintenance procedures are crucial for the survival of the historical monuments that make Visby "the best-preserved fortified city in Northern Europe." Notwithstanding the existence of a policy for the conservation of historical monuments in Visby, there are some deficits in the scope of preventive conservation.

Preventive conservation is a multidisciplinary process that requires

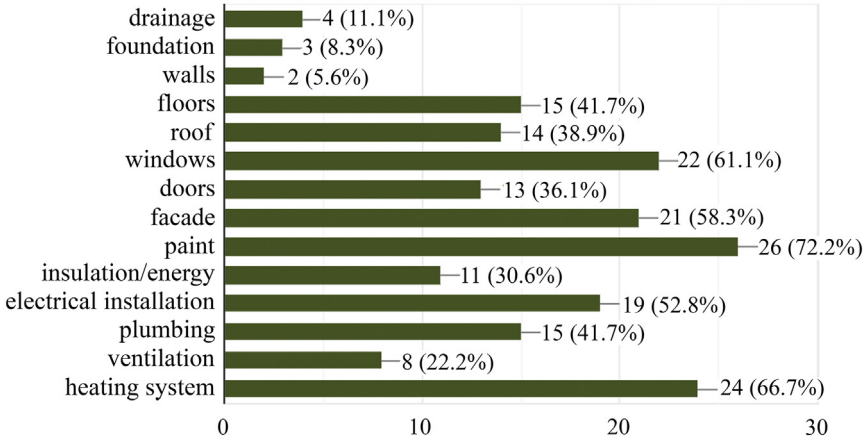

Fig. 8. Distribution of the maintenance works in the dwellings.

systematic monitoring and planned maintenance programmes. The most significant result for this study is that locals support the existence of a non-profit organisation, like Monumentenwatch, in Visby to monitor the condition of their dwellings and give professional recommendations with appropriate maintenance programmes. The study results also show that although the locals are aware of the value of living in a cultural heritage site, they tend to perform maintenance on their dwellings only when they encounter a problem. Mostly, they support the holistic approach for the practical aspect of preservation. This can be a result of lack of knowledge about preventive conservation. Although most of the people regarded owning and living in a historical building as an asset and are knowledgeable about the protection status of their properties, conservation policies and legal guidelines, they should be informed that costlier and large-scale restorations can be avoided by preventive conservation. But in current system, the most important topics for the people who live in Visby is permitance for repair and tax deduction. Even in a small-scale repair, they have to apply for permission and manage their time and budget on their own with some advice from various governmental organizations, professionals or craftsmen. Results indicated that time and cost are crucial for the people and current system affects the decision process in a negative way. However, the great majority of the buildings in Visby are being used as a permanent residence. In this case, owners tend to keep their properties in a well-preserved condition. Most of the respondents are well-educated. They are aware of the importance of maintenance and historic background of the settlement. But apparently, owners and temporary residents, mostly students, have different point of view on maintenance and knowledge about conservation status. Responses also revealed that non-profit organizations and retailers are not a best way to obtain knowledge about maintenance. They mostly prefer other citizens, schools, government authorities and printed materials instead of an organisation. They need both technical and architectural support

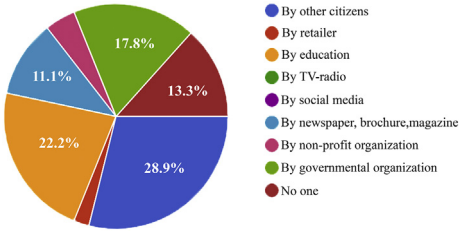

Fig. 10. Sources of knowledge about maintenance.

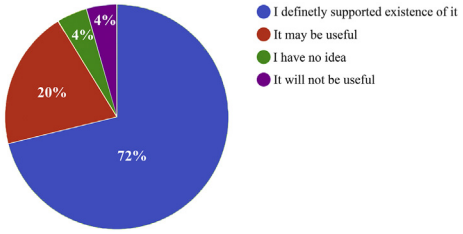

Fig. 11. View of respondents for existence of a non-profit organisation for regular maintenance.

from the organisation, but the primary reason for maintenance is technical needs. Up to now, restoration works have been carried out without a deailed condition report of the buildings. Perhaps, it could be possible to apply this work with less cost and less time with the support of the organisation. Furthermore, there is already a volunteer organisation for conservation, with nearly four hundred members, whose existence is invaluable for the congregation of the citizens, as well as, for increasing awareness about the conservation of the city. However, it should be transformed into an organisation that assumes more

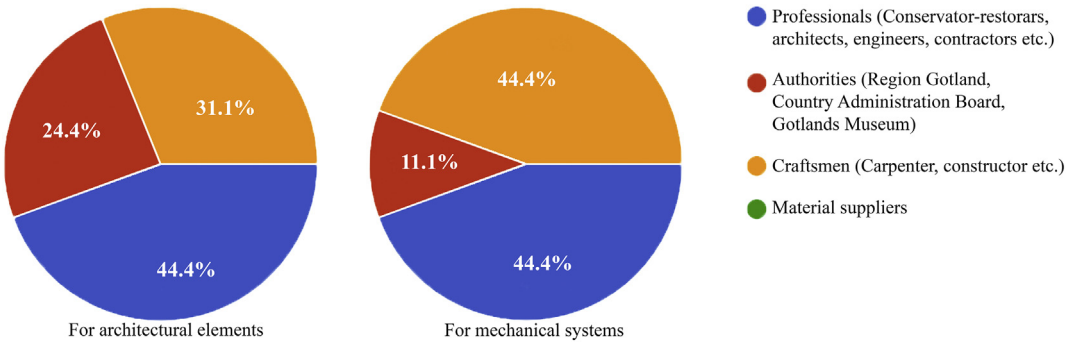

Fig. 9. Consultees architectural elements and mechanical systems.

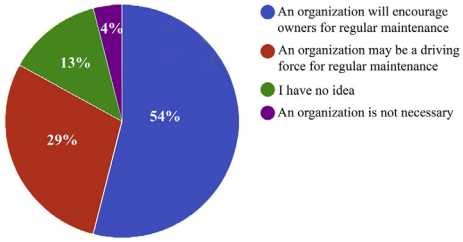

Fig. 12. View of respondents for benefits of a possible non-profit organisation in Visby.

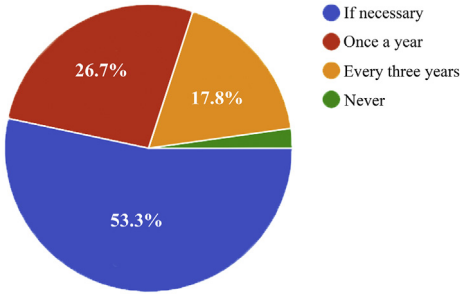

Fig. 13. Preferred frequency of being informed about maintenance.

responsibility in the maintenance of historic buildings and provides greater technical support to citizens. This support should not only focus on problem-solving, but also on periodic monitoring to ensure preventive conservation. As a summary, most of the respondents supported the existence of an organisation in Visby to provide consultancy and they agreed that the existence of such an organisation would provide the owners with the benefit of a regular monitoring and maintenance for their properties. Although the survey was conducted with a small number of people, the study is significant as it demonstrates the general tendency of the citizens regarding preventive conservation in Visby.

The study can facilitate the adoption of the community's opinion on the existence of a non-profit organisation for planned maintenance programmes in Visby. Furthermore, the existing organisation has the potential to increase awareness and promotion of the participatory conservation approach. However, hiring additional professionals and implementing a systematic policy for Visby can be conducive to attaining a more active and effective organisation. In future studies, the survey may be repeated in the summer months when most of the owners return to their homes in Visby, which would facilitate procuring more accurate results on the existing approach to maintenance, as well as, the possibility of an organisation for preventive conservation. Moreover, the contribution of the non-profit organisation to the preventive conservation policy should be monitored, evaluated and improved. In conclusion, with a systematic preventive conservation policy based on a cooperation between non-profit and governmental organizations, Visby can set a pilot example for other cultural heritage sites.

Acknowledgments

The authors would like to thank Louise Hoffman Borgö from The County Administrative Board, Lars W. Görenberg, Eva Backman and Lennart Johansson from Visby Innerstadsförening for their help and contributions.

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