Accessibility improvement interventions realised in Byzantine monuments of Thessaloniki, Greece

Aristotelis Naniopoulos, Panagiotis Tsalis, Eleni Papanikolaou, Alexandra Kalliagra and Charitomeni Kourmpeti

Aristotelis Naniopoulos is Professor of Transport Systems, Dr Panagiotis Tsalis is Civil and Transportation Engineer, Eleni Papanikolaou and Alexandra Kalliagra are Architects, all at Transport Systems Research Group, Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece. Charitomeni Kourmpeti is based at Transport Systems Research Group, Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece.

Abstract

Purpose – Access to culture is a fundamental right of people with disabilities and a significant aspect in the development of accessible tourism. A visit to a monument provides an authentic experience which cannot be substituted by any representation. However, any interventions to improve accessibility should be made carefully, so as not to alter the monument's character, or damage it visually or structurally. The paper aims to discuss these issues.

Design/methodology/approach – A theoretical approach model was defined in the PROSPELASIS project for the improvement of accessibility in monuments which was applied in Byzantine monuments of Thessaloniki. This approach contains the following steps: evaluation of existing accessibility level; definition of alternative solutions; creation of final studies, approval by archaeological authorities and implementation of interventions.

Findings – In six major Byzantine monuments significant improvements were realized which include: installation of two lifts and creation of a new staircase at Acheiropoietos; creation of a metal bridge, a new staircase and installation of a lift at Rotunda; opening of the secondary gate and creation of a ramp at the Heptapyrgion fortress; creation of an accessible toilet at the Saint Demetrios church; installation in the six monuments of a WiFi system providing text and audible information as well as information in Greek and International Sign Language; creation of two tactile models; creation of a "cultural route" connecting three major Byzantine monuments.

Originality/value – For the first time, to the knowledge, a set of interventions has been realized in Byzantine monuments focusing on various categories of people with disabilities, i.e. motor, visual, hearing and cognitive.

Keywords Tourism, Disability, Cultural tourism, Accessibility of monuments, PROSPELASIS, Spatial planning

Paper type Research paper

O Aristotelis Naniopoulos, Panagiotis Tsalis, Eleni Papanikolaou, Alexandra Kalliagra and Charitomeni Kourmpeti. Published in the Journal of Tourism Futures. This article is published under the Creative Commons Attribution (CC) BY 4.0) licence. Anvone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at http:// creativecommons.org/licences/by/ 4.0/legalcode

1. Introduction

Addressing, at an international level, the problems of protection, conservation, restoration and management of historical centres, archaeological sites, architectural aggregations, monuments and works of art, has been a major issue which has gradually led to the formation of a scientific field with a very wide subject area and interdisciplinary interfaces, which is not covered, as before, by the content of the History of Architecture and Art. Today, we are not only interested in the monuments' past; we are also interested in their present and future. We are interested in the monuments' preservation, restoration and emergence in direct relation to their present and future environment, their integration into modern life and their connection with economic, educational, tourist and social aspects in particular.

Access to culture is a fundamental right of people with disabilities (EU Council, 2003; United Nations, 1993). A visit to an archaeological site or monument in particular, is an original, unique experience and constitutes a main attraction in Greece for tourists. Although there are movable findings from all historical periods of Greece in museums around the world, the main archaeological sites and monuments can be found only in their original place. A visit to an archaeological site provides direct contact with the area and the monument, an authentic experience which cannot be substituted by any representation (visual, audio, tactile). The visit entails the use of one's senses allowing the composition of all stimuli in something unique. However, archaeological sites and monuments, by their nature, do not allow major interventions to their structure. Any interventions to improve accessibility should be made carefully, so as not to alter the monument's character, or damage it visually or structurally (Naniopoulos and Marki, 2003; English Heritage, 2004, 2005; National Disability Authority of Ireland (NDA), 2011).

The concept of accessibility, as used here, includes:

- usability and possibility of independent physical access and movement; and
- perceptibility, referring to the way one perceives, understands the environment (Fertier, 2003).

In a historic city such as Thessaloniki, which has lost its historic wealth to a great extent resulting in a situation where its monuments constitute isolated islets without any visual contact between them, their identification, their understanding and access to them is particularly difficult not only for people with disabilities and reduced strength but also for ordinary visitors. This problem is exacerbated by the fact that the current ground level is often four to five metres above the ancient level where the entrance to the monuments is.

Under these circumstances any attempt to socialize the cultural heritage of the city should pursue the integration of monuments and archaeological sites with two objectives:

- to provide easy access for all visitors to monuments, including people with restricted mobility; and
- to help visitors through the provision of adequate information and the indication of ways of moving from one monument to another, connecting the pieces of the puzzle and composing an integrated picture of the city in different historical phases.

This paper describes the improvement of accessibility in selected Byzantine monuments of Thessaloniki using a methodology created in the frame of the "PROSPELASIS" project, financed by a grant from Iceland, Liechtenstein and Norway through the EEA Financial Mechanism 2004-2009 (50 per cent) and from the public investments programme of the Hellenic Republic (50 per cent). The project was realized by the cooperation of the Aristotle University of Thessaloniki (project promoter) and the 9th Ephorate of Byzantine Antiquities.

2. Methodology

A theoretical approach model was defined first for the improvement of accessibility in monuments. This was elaborated further, by applying it to Byzantine monuments of Thessaloniki. This approach contains the following steps:

- 1. definition of parts of the monument that can become accessible;
- 2. evaluation of existing accessibility level and identification of obstacles;
- 3. definition of alternative solutions at pre-study level;
- 4. creation of final studies and implementation of accessibility improvement interventions;
- 5. training of personnel involved; and
- 6. information provision on existing facilities.

The ideal aim concerning accessibility of monuments is that all areas in a monument should become accessible. If that is not possible, as, for example, in most cases of castle battlements for a wheelchair user, for example, this should be determined from the beginning. Thus, from the first

stages of a study, one should determine the parts of a monument that can be made accessible, as well as those that do not provide this possibility, though only after sufficient vindication (English Heritage, 2004, 2005).

This is followed by the evaluation of the existing accessibility level. Appropriate checklists were devised which cover both the monument's physical access as well as its perceptibility and its use (it should be noted that most of the assessed monuments still host religious activities). To create the lists, first the needs of people with disabilities had to be determined (Tsalis and Naniopoulos, 2008). This lead to the creation of a task model which was constructed through communication with people with disabilities, associations of people with disabilities, in situ observation of the use of infrastructure, communication with experts specialised in accessibility as well as relevant literature. (Department for Transport, 2002, 2007; Royal National Institute for the Blind, 1995, 2003; Transport Systems Research Group AUTh, 2005; Greek Ministry of Environment, Land Planning and Public Works, 2003; Americans with Disabilities Act Accessibility Guidelines, 1992; English Heritage, 2004, 2005; NDA, 2011). The checklists created in the PROSPELASIS project are structured so that the auditor would not have to be specialized in accessibility.

The implementation of the checklists lead to the construction of reports describing the existing situation for each monument and, next, to the definition of alternative solutions for the improvement of accessibility which followed the following principles:

- All of the modern constructions which were necessary for improving the accessibility of monuments, and particularly interventions such as ramps, corridors, lifts, etc., were installed in a way which does not insult the values of the monument.
- These constructions were not projected on the monument and were not fixed on the monument in any way. Bearing in mind that monuments of Thessaloniki are usually at a lower level than that of the street level, these constructions were fixed in the ground slopes of their surroundings and stand out as extension of the equipment of a modern city rather than as part of the monument.
- In order to avoid confusion, these constructions do not look like old ones, and their size and shape does not exceed what is required for functionality purposes.
- The use of modern technology is restricted to a degree that does not compromise the principles of monument restoration.
- In the case of artistic interventions, these respect the historic and artistic character of the monument and do not contradict with the general principles for the protection and restoration of monuments.

Perhaps it should be mentioned here that the notion of authenticity in the tourism industry has various facets. According to Wang, it can be classified into objective, constructive and existential authenticity:

- Objective authenticity refers to a museum-linked usage of the authenticity of the originals that
 are also the toured objects. In this case, the authentic experience is caused by the recognition
 of the toured objects as authentic. Thus, there is an objective criterion used to measure
 authenticity.
- Constructive authenticity refers to a result of social construction, not an objectively measurable quality of what is being visited. Things appear authentic not because they are inherently authentic but because they are constructed as such.
- Unlike both objective and constructive authenticities, existential experience involves personal
 or intersubjective feelings activated by the process of tourist activities. People feel they
 themselves are much more authentic and more freely self-expressed than in everyday life, not
 because they find the toured objects are authentic but simply because they are engaging in
 non-ordinary activities, free from the constraints of the daily (Wang, 1999).

In this particular case, perhaps the work of Lew describes the situation faced by the interventions implementation team. In his study on authenticity in the tourism development of older retail

districts (Lew, 1989), he describes three development experience types which place as paramount one of the following objectives:

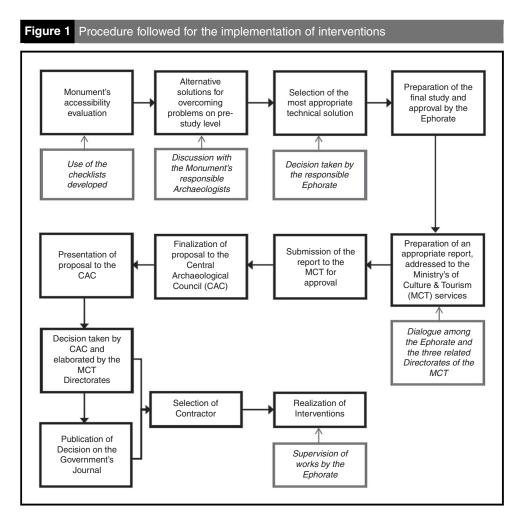
- historic, cultural or environmental conservation;
- tourism image development; and
- retail economic development.

In the case of the Byzantine monuments examined in the frame of the project, the historic conservation was the utmost priority and, thus, any solution that did not respect this was rejected, despite the fact that it could be beneficial from the tourist image or economic development point of view.

The choice of the preferable solutions (where users have also been involved) was followed by the creation of final studies for the interventions and their implementation. The participation of users during the implementation of interventions was achieved through continuous cooperation with local associations of persons with disability and restricted mobility and was deemed essential in order to pinpoint and correct any mistakes before the interventions are open to the public (Naniopoulos *et al.*, 2011b).

After the completion of the accessibility improvements, two final very important steps took place. First of all, the monuments' users were informed about the new provisions and, second, all involved actors (including authorities of antiquities, tourist guides, organizations of people with disabilities, etc.) received training on disability issues (English Heritage, 2004, 2005; Naniopoulos et al., 2009a, b; NDA, 2011).

Figure 1 presents the procedure followed.



3. Results

The methodology created has been applied to the Byzantine monuments of Thessaloniki. In total 20 Byzantine – UNESCO monuments were evaluated and solutions for accessibility improvement were completed, in pre-study level, for each of them (Naniopoulos *et al.*, 2010a, b). In six of these monuments, which were selected based on their historic significance and interest to the visitor, final studies were made and accessibility improvement interventions, which are presented for each monument at the following, were completed (Naniopoulos *et al.*, 2011a, b). It should also be noted that, in order to create solutions of high-aesthetic quality, two well-known artists have been involved in this process, Constantin Xenakis, who was occupied mainly with the signing of a route connecting three monuments, and Cris Giannakos who contributed to the design of ramps.

The following accessibility improvement interventions were carried out at each monument.

3.1 Acheiropoietos

The monument had two entrances to its yard, both of them used by the general public. Staircases bridged the height difference between the yard's entrance and the monument's entrance, thus making access to wheelchair users impossible (Naniopoulos *et al.*, 2010a).

At the north side of the monument there was a non-modulated yard, where 9th Ephorate's archaeologists have archaeological excavations in progress. A lift was installed there, its location ensuring that it causes minimum aesthetic intervention to the monument. The lift is fixed on a base made out of concrete as well as on an existing retaining wall (Plate 1).

Plate 1 The lift installed in Acheiropoiitos



However, the installation of the lift alone could not solve the problem of achieving access into the main monument and a series of other interventions were necessary. Thus, it was decided to widen appropriately a gate at the northwest side of the monument. In order to bridge the existing height difference between the outside of the new door and its surroundings, a metal platform was created. The height difference in the inside of the door was bridged through the creation of a platform with a metal staircase and a small platform lift.

As far as the visitors' information is concerned, a WiFi application was created, focusing in particular to visitors with sensory disabilities. Users retrieve text information about the monument in Greek, English and Russian. Info is also available in audio format in the three languages mentioned above as well as in Sign Language, Greek and International, while the software used is compatible with screen readers. Information on the monument is also provided in Braille on an individual basis. A tablet PC is available in situ for those who do not have a WiFi compatible mobile phone.

3.2 Saint Demetrios (Hagios Dimitrios)

As the entrance to the monument and horizontal circulation in it did not pose significant problems, the interventions concerning physical accessibility focused on the improvement of access to the monument's public toilets, which are placed in the monument's yard. A new toilet was created, its dimensions and equipment ensuring that it can be used by visitors with restricted mobility. The colour contrasting surfaces used facilitate its use by visitors with restricted vision. Furthermore, a new ramp leading to its entrance was created, with a more suitable slope and handrails.

As far as the visitors information is concerned, a WiFi application with characteristics similar to the one installed in Acheiropoietos was created (PROSPELASIS Team, 2012).

3.3 Saint Nicholas Orphanos (Hagios Nikolaos Orfanos)

Due to the monument's very small scale and particular characteristics, it was decided that the significant interventions required to improve physical access to it would be at odds with its particular character. Thus, only a portable ramp was purchased and is available upon request. As far as the visitors' information is concerned, a WiFi application with characteristics similar to those of the application in Acheiropoiitos was installed (PROSPELASIS Team, 2012).

3.4 Rotunda

Rotunda had significant problems as far as physical accessibility was concerned. The large height difference between the present main entrance of the monument and its interior made access impossible for wheelchair users (Naniopoulos *et al.*, 2010a).

As a solution which would not only improve access to the monument for visitors with restricted mobility but also highlight further its importance, the approach of the monument from the main "Imperial" gate, opened on the south side of the monument and not in use, was selected. In order to enable visitors to reach this gate, a bridge over the excavation of the south outbuildings of the monument, was created. The bridge has a total length of 15.5 m and is constructed from metal truss section. The bridge's surface is constructed from perforated metal, while metal plates on the surface act as tactile signs for pedestrians with sight problems. In general, the interventions are designed so as to have the minimum possible visual impact. The artist Cris Giannakos has contributed to the design of the bridge (Plates 2 and 3).

In order to bridge the height difference between the entrance and the monument's floor a new staircase as well as a lift were installed inside the monument. The lift is consistent with the current technical standards. The new staircase was created out of metal, and forms a small platform at its top. This construction, together with the "bridge", creates a single tread for wheelchair users. It should be noted also that alternative designs were presented in order to have a final approval of the Central Archaeological Council (CAC) of the Hellenic Ministry of Culture.

As far as the visitors' information is concerned, a WiFi application similar to the one at Acheiropoietos was installed. To further assist visitors with restricted vision, a tactile model of the

Plate 2 The bridge created at Rotunda



Plate 3 The bridge created at Rotunda with signs leading to the monument



monument was installed near the newly opened entrance, with an audible description of the model available through the WiFi system (Plate 4).

The monument is also part of the "Cultural route" connecting it with Hagia Sofia and Acheiropoietos. To highlight this, a triangular column sign, creation of the artist Constantin Xenakis, comprised of three different signs depicting the monuments that are connected through the cultural route, was strategically placed at the middle of the route, near the Arch of Galerius which is an important monument of the city (PROSPELASIS Team, 2012).

It should be noted that the interventions for the improvement of physical and sensory accessibility that were completed at the "Rotunda" monument of Thessaloniki in the frame of the "PROSPELASIS" project received an honorary award in the Union Internationale des Architectes competition "Friendly Spaces Accessible to All".



3.5 Hagia Sofia

There are no particular problems concerning the monument's physical accessibility. Thus, the only intervention deemed necessary for the improvement of physical accessibility was the creation of a small ramp that would bridge a small height difference of 11 cm at the monument's entrance threshold.

As far as the visitors' information is concerned, a WiFi application was created, focusing in particular to visitors with sensory disabilities. The monument is also part of the "Cultural route" connecting it with Acheropoietos and Rotunda.

3.6 Heptapyrgion Fortress

The monument has two entrances to its yard, only one of them being used by the general public. The staircase in front of the monument's main entrance makes access to it by wheelchair users impossible (Naniopoulos et al., 2010a, b).

The main entrance leads to a corridor inside the monument, where the Ephorate of Byzantine Antiquities' offices are located and to a second entrance with a staircase in front of it. Thus, even if the visitor negotiates the main entrance, further access to the monument is prohibited for wheelchair users and difficult for users with restricted mobility. A secondary entrance, which was closed, appeared to be a better solution for a visitor with restricted mobility to access the monument. This led directly to the monument's main area. It should be noted, however, that this entrance had a height difference with its surroundings. In order to bridge the height difference between the entrance and the surroundings' ground the construction of a ramp was deemed

necessary. The ramp was constructed from sheet metal grid with a length of 8.00 m and 5 per cent slope, to allow the unhindered movement of wheelchair users (Plate 5).

As far as the visitors' information is concerned, a WiFi similar to the one at the Acheiropoietos monument was installed.

To further assist visitors with restricted vision, a tactile model of the monument was created and installed near the newly opened entrance. This will give visitors the chance to get familiar with the monument, understand its dimensions and characteristics. An audible description of the tactile model is also available through the WiFi system installed (PROSPELASIS Team, 2012) (Plate 6).

3.7 Route connecting three monuments

A major symbolic action of the project involved a route connecting three of the most important monuments of the city, i.e. Hagia Sofia, Acheropoietos, Rotunda. It should be noted that the three monuments are easily within walking distance from each other and constitute major poles of attraction for visitors of Thessaloniki.

The main objectives in the design of the route were the following:

- To facilitate people with intellectual and developmental disabilities in their orientation to the
 monuments and give a strong message that this group of people is not forgotten in mobility
 and perceptibility improvement interventions.
- To create a pilot intervention which could lead to a larger scale signage connecting the major monuments of the city centre, aiming at creating a "Byzantine route". Such an intervention would not only facilitate the movement of people with intellectual and developmental disabilities, but also constitute a tourist attraction and a "selling point" for visiting the city.

The well-known artist Constantin Xenakis was involved in the design and the implementation of the signage. A particular colour was assigned to each of the monuments, connected by the route. According to the artist:

- blue was selected for Acheiropoietos due to the blue colour used in some mosaics;
- yellow was selected for Hagia Sofia, because the monument is a typical Byzantine one and yellow was the colour of the Byzantine Empire; and
- red was selected for Rotunda, as the monument was first erected during the Roman period and red was the colour of the Byzantine Empire.

Plate 5 The ramp created at Heptapyrgion



The interventions realized on the route included:

- · Colouring of selected pavement tiles with each monument's name, using the specific colour code for each monument.
- Drawing of arrows on pavement tiles leading to the monuments with the colours assigned to each monument.
- Diagrams of the route connecting the three monuments with various information placed on selected bus stops along the route. It should be noted that the three colours (yellow, red, blue) are also used by Thessaloniki's transport company in the graphic design of the local buses.
- · Design and installation of resting bars around trees placed along the route. These would facilitate a short stop/rest of visitors during their walk along the route.
- Vertical signage through the design and installation of information columns outside the monuments. The information columns provide information on the history of the monument in Greek, English and Russian, information on accessibility provision with the use of pictograms as well as a diagram showing the connection with the other monuments that constitute the route (Plates 7 and 8).

4. Lessons learned

The actual materialization of interventions lead to the refinement of the developed methodology in order to adapt it to the particular technical problems and needs

Plate 7 Colouring of pavement tiles



Plate 8 Resting bar installed



which the interventions' implementation team faced "in situ". These included issues such as the following:

- The particularly strict guidelines concerning the structural form of pedestrian bridges. These have led to the creation of alternative solutions concerning the Rotunda bridge's form and the placement of its foundation due to fears concerning the aesthetic impact a large scale infrastructure would have. For the construction of the bridge a detailed study of the available data from older excavations was performed in order to ensure that the foundations are over the early-Byzantine layers and are not in touch with the architectural remains of the south annexes of the early-Byzantine phase of the monument. During the foundation of the southern end of the bridge, two attic-ionian type bases were revealed. Between them, an early-Byzantine floor made out of marble plates was located. Next to the base at the eastern end of the bridge, two parts of an unfluted, monolithic column shaft were identified (Raptis, 2012). Thus, the creation of the bridge's foundations presented the archaeologists' team with the opportunity of identifying important findings, posing at the same time the need for finding a new foundation solution, different from the one originally designed.
- The need for the selection of particular types of lifts that would not use the monuments' walls and floors as structural members.
- The selection of bridge surface that would not create aesthetic inconvenience to visitors.
- The creation of audible description of the tactile models that would be easily comprehensible by visitors that are not familiar with them.

However, the realization of interventions also revealed procedures which were not known to the research team from the beginning of this project, mainly concerning the approval of the proposed interventions from the CAC of Greece.

The CAC is the highest advisory body on all matters pertaining to the protection of ancient monuments, archaeological sites and sites of exceptional historical or legendary importance up to 1830.

The CAC:

- recommends to the Minister on principles governing the protection of the cultural heritage and the annual programs of expropriations or direct purchases, excavations, restorations, conservation as well as other works on monuments; and
- 2. gives advisory opinion, among others, on the protection of monuments entered on the World Heritage list, as well as other monuments, and archaeological or historical sites of outstanding importance, interventions of major importance to monuments and sites, the designation and establishment of archaeological and historical sites and protection zones in accordance with the provision of the law.

The CAC is composed of 17 members, while rapporteurs to the CAC are the respective heads of Directorates of the Ministry's Central Services depending on the issue to be discussed.

The CAC approves or rejects the proposals made or provides suggestions for further elaboration, by majority voting. Following the CAC decision, next the relevant M.C.T Directorates undertake to elaborate it. The MCT Directorates communicate with the Ephorate and, depending on the case, they inform on:

- the approval of proposal as it is;
- the rejection of the proposal; and
- the approval of the proposal with certain changes.

In the third case, a new proposal may be asked to be presented to the CAC or the Directorates will undertake the follow up of their appropriate elaboration.

Due to the importance of the monuments where the interventions took place (UNESCO monuments), all accessibility improving constructions had to be approved by the CAC. In the case of the PROSPELASIS team's proposed interventions, the head of the Directorate of

Restoration Works presented the PROSPELASIS team proposed interventions, together with the opinion and recommendation of the MCT Directorates. The presentation and discussion took place in closed doors. The PROSPELASIS team, which consisted of AUTh researchers and the Ephorate's archaeologist were invited to answer certain questions and present their opinion on certain issues.

5. Future applications

In order to maintain Europe's tourism leadership, a need to modernize and innovate the European tourism offer is recognized. Diversifying tourism products and capitalizing on common and rich heritage (natural, cultural, historical, industrial, etc.) is the first priority listed in the European Commission's Action Plan for tourism issued in 2010. It is also a stated intention of the Commission to capitalize on those initiatives and look for synergies with similar or complementary initiatives undertaken by other International and European Organizations, such as the UNESCO World Heritage Sites.

The interventions carried out in the "PROSPELASIS" project combine these characteristics, as the implemented large scale accessibility improvement interventions in major monuments of Thessaloniki which are included in the UNESCO World Heritage list. It should be noted that UNESCO is focusing in particular on the connection between cultural heritage and development through the Mexico City Declaration on Cultural Policies (UNESCO, 1982) and the Report of the World Commission on Culture and Development "Our Creative Diversity" (UNESCO, 1996). Today, cultural heritage, in particular, is perceived as an important vehicle for development since "cultural tourism contributes to economic development" and "cultural heritage builds social cohesion" (UNESCO, 2010; Van der Auwera and Schramme, 2014).

Thus, the methodology and process developed constitute a precedent for further actions in other monuments of similar importance, not only in Greece but at European and international level, since it does not rely on a particular country's legislation, characteristics and authorities' structure.

Moreover, the interventions have initiated a cooperation between involved stakeholders, with common actions concerning access to Thessaloniki's cultural heritage have already taken place. The 9th Ephorate of Byzantine Antiquities has established an open dialogue and continuous cooperation with both the Aristotle University of Thessaloniki and the local associations of persons with restricted mobility, in order to discuss further common actions for improving access to the city's Byzantine monuments. The Museum of Byzantine Culture of Thessaloniki, in cooperation with the local Association of the Blind, have created a tactile tour for blind visitors of particular artefacts exhibited at the Museum, based on the methods followed in PROSPELASIS for the description of monuments' tactile models (MBC, 2014).

Finally, it should be noted that the utility of the methodology created has already been recognized by the local scientific and academic community, with the authors presenting it as part of a "lifelong learning" programme focusing on culture and special education which was organized by the University of Athens, the University of Thessaly and the University of Macedonia.

6. Conclusions

The methodology developed, through its successful implementation in six Byzantine monuments of Thessaloniki, proved its validity and aspires to provide a tool that could be applied to Monuments at a wider level.

The concluded interventions are expected to considerably improve the monuments' accessibility as well as markedly raise the number of visitors with disability.

The realization of these interventions, as well as the training seminars realized during the "PROSPELASIS" project, have provided invaluable experience for all involved actors (including Authorities of antiquities, tourist guides, organizations of people with disabilities, etc.).

The project participants aspire that this experience can lead to further actions that will improve monuments' and archaeological sites' accessibility at national level.

7. Recommendations of the study

The devised methodology creates a structured process assisting engineers in improving monuments' and archaeological spaces' accessibility level. However, it should be noted that each monument has its own particular characteristics which might render any efforts for improving its accessibility impossible without contradicting with its character. That was the case with the church of Hagios Nicholaos Orphanos during the PROSPELASIS project, where it was decided that no improvement on the monument's physical accessibility could be made.

Finally, emphasis should be placed on the fact that for the successful "socialization" of monuments within a historic centre, main prerequisites include the deep knowledge of the monument, the knowledge of its historical phases and of the stromatography of the ancient city, the knowledge of the functions and problems of the modern city, the acknowledgment of the special needs of the monument's users, the collaboration of the city's various authorities and institutes and the harmonious collaboration between archaeologists, architects, artists, civil engineers, museologists, urban planners, transport engineers, mechanical engineers, sociologists and teachers. All these notions and disciplines were combined and cooperated in Thessaloniki in order to give visitors with restricted mobility and perceptibility the chance to taste the authentic experience of the visit of a World Heritage monument.

It's up to the city and the involved authorities to utilize the achievements of PROSPELASIS in other monuments, creating a unique competitive advantage in promoting its accessible tourism opportunities.

References

Americans with Disabilities Act Accessibility Guidelines (1992), "Checklist for buildings and facilities", available at: www.access-board.gov/adaag/checklist/a16.html (accessed 20 October 2008).

Department for Transport (2002), Inclusive Mobility, DfT, London.

Department for Transport (2007), Manual for Streets, DfT, London.

English Heritage (2004), Easy Access to Historic Buildings, EH, Swindon.

English Heritage (2005), Easy Access to Historic Landscapes, EH, Swindon.

EU Council (2003), "Council resolution of 6 May 2003 on accessibility of cultural infrastructure and cultural activities for people with disabilities (2003/C 134/05)", Official Journal of the European Union, Vol. 46, p. 7.

Fertier, A. (2003), "'EUCREA international: policy, objectives and programme of action' in access to culture and sports for people with disabilities", Access to Culture and Sports for People with Disabilities, Conference Proceedings, Hellenic Ministry of Culture, Thessaloniki, 30 October-1 November.

Greek Ministry of Environment, Land Planning and Public Works (2003), Designing for All, MELPPW, Athens.

Lew, A. (1989), "Authenticity and sense of place in the tourism development experience of older retail districts", *Journal of Travel Research*, Vol. 27, No. 4, pp. 15-22.

Museum of Byzantine Culture (2014), "Touch and discover Byzantium – an audio – tactile tour for blind and visually impaired visitors", available at: http://mbp.gr/images/Ekdoseis/pdf_entypa_MBP/Tyfloi%2016selido%2021x29cm%20EN_VIEW.pdf (accessed 18 May 2015).

Naniopoulos, A. and Marki, E. (2003), "Accessibility and comprehensibility of monuments and archaeological sites for people with restricted mobility", Access to Culture and Sports for People with Disabilities, Conference Proceedings, Hellenic Ministry of Culture, Thessaloniki, 30 October-1 November.

Naniopoulos, A., Papanikolaou, E., Kalliagra, S., Tsalis, P., Palantzas, G., Nalmpantis, D., Genitsaris, E., Kyriakopoulos, N. and Tokmakidis, P. (2010a), "Evaluation and mapping of the existing situation in selected monuments/spaces", PROSPELASIS project Deliverable, AUTh, Thessaloniki.

Naniopoulos, A., Giannakos, C., Xenakis, C., Papanikolaou, E., Kalliagra, S., Kourbeti, C., Tselegidis, I. and Digbasbani, A. (2010b), "Proposal of functional alternative solutions in pre-study level for selected monuments/spaces", PROSPELASIS project Deliverable, AUTh, Thessaloniki.

Naniopoulos, A., Tsalis, P., Lazaridou, P., Kyriakopoulos, N. and Sakantamis, K. (2009a), "Determination of population groups and description of a task model", PROSPELASIS project Deliverable, AUTh, Thessaloniki.

Naniopoulos, A., Tsalis, P., Gerasimidis, S. and Kyriakopoulos, N. (2009b), "Methodology for the examination of the existing situation", PROSPELASIS project Deliverable, AUTh, Thessaloniki.

Naniopoulos, A., Giannakos, C., Xenakis, C., Papanikolaou, E., Kalliagra, S., Kourbeti, C., Gerasimidis, S., Koufaki, I., Vavelidou, C., Pasia, A. and Karagiorgos, F. (2011a), "Proposal of functional solutions in final study level for selected monuments/spaces", PROSPELASIS project Deliverable, AUTh, Thessaloniki.

Naniopoulos, A., Antonopoulos, C., Karadedos, G., Polychroniou, I., Tsalis, P., Genitsaris, E., Nalmpantis, D. and Palantzas, G. (2011b), "Handbook of basic principles for the realization of accessibility improvements in monumental spaces", PROSPELASIS project Deliverable, AUTh, Thessaloniki.

National Disability Authority of Ireland (NDA) (2011), Code of Practice on Accessible Heritage Sites, NDA, Dublin.

PROSPELASIS Team (2012), "Interventions realized in selected monuments", PROSPELASIS project Deliverable, AUTh, Thessaloniki.

Raptis, K. (2012), "Interventions for improvement of accessibility of Byzantine monuments of Thessaloniki. The archaeological aspect of the PROSPELASIS project", *The Archaeological Works in Macedonia and Thrace 25*, Conference Proceedings, Thessaloniki, 1-3 March.

Royal National Institute for the Blind (1995), Building Sight, JMU, London.

Royal National Institute for the Blind (2003), The Talking Images Guide, RNIB, London.

Transport Systems Research Group AUTh (2005), "Checklist for the evaluation of municipal buildings", Euvatos Polis project Deliverable, AUTh, Thessaloniki.

Tsalis, P. and Naniopoulos, A. (2008), "Needs of people with disabilities in tourist activities", MEDRA Project Deliverable, Toroslar Municipality, Toroslar.

UNESCO (1982), "Mexico city declaration on cultural policies", World Conference on Cultural Policies, Mexico City, 26 July-6 August.

UNESCO (1996), "Our Creative Diversity", report of the World Commission on Culture and Development, UNESCO, Paris.

UNESCO (2010), "The power of culture for development", CLT/2010/WS/14, UNESCO, Paris.

United Nations (1993), "United Nations General Assembly Rules on the Equalization of Opportunities for Persons with Disabilities Resolution 48/96", New York, NY.

Van der Auwera, S. and Schramme, A. (2014), "Cultural heritage policies as a tool for development: discourse or harmony?", *ENCATC Journal of Cultural and Policy*, Vol. 4 No. 1, pp. 4-8.

Wang, N. (1999), "Rethinking authenticity in tourism experience", *Annals of Tourism Research*, Vol. 26 No. 2, pp. 349-70.

Further reading

United Nations (1996), "Accessibility for the disabled – a design manual for a barrier free environment", available at: www.un.org/esa/socdev/enable/designm/ (accessed October 2008).

Corresponding author

Professor Aristotelis Naniopoulos can be contacted at: naniopou@civil.auth.gr

For instructions on how to order reprints of this article, please visit our website: www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com