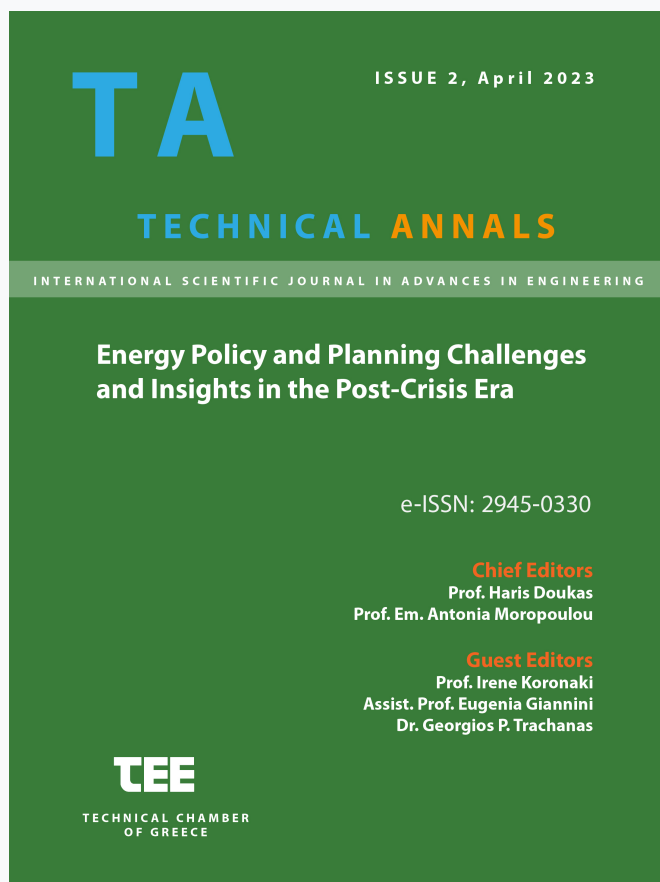


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Delphi: A social survey (2022) and some proposals for the sustainable development of the area

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Abstract. The present paper addresses the issue of sustainable development of the Delphi area under the scope of Environmental Design. Delphi is a historic place with multiple points of interest due to its natural beauty, archaeological importance and its traditional character. The paper focuses upon the renovation and re-creation of a sustainable settlement, where all elements that concern the built environment and the urban area of Delphi, integrate morphologically as a whole. The proposal includes the traditional buildings' restoration and the environmental and aesthetic upgrading of the buildings, the public open spaces and their partial elements. The project's success depends on each place's comparative advantage and on the promotion and protection of both the natural environment and the cultural heritage.

Keywords: sustainable development, urban built environment, Delphi, environmental upgrading

1 Introduction

Approaching Delphi as an area of study, we find that few places in the world can simultaneously arouse so many interests. And this is because Delphi can be approached as follows: 1) as an extremely beautiful and sensitive natural environment, 2) as a sacred place for the Greeks from the mythical times with well-preserved antiquities, which show even today why they were considered as the center of the world and 3) as a small modern town based mainly on tourism and less on agriculture and livestock.

The present study refers mainly to the contemporary built environment, and not to the Antiquities area, which is a completely other subject.

1.1 A few things about the past, the present situation, the challenge, and the town

During the 19th century, French archaeologists considered that the main part of the antiquities were located under the buildings of the village of Kastri. So at the beginning of the 20th century the village was demolished and rebuilt entirely outside the outline of the antiquities, and thus the antiquities were revealed and at the same time the new

settlement of Delphi town was created. When the antiquities resulted in attracting visitors, Delphi dedicated itself to providing services to the antiquities and visitors. Restoration of antiquities, a large museum, new roads in the area, many hotels and the European Cultural Center were created.

During the last 50 years, Delphi have developed economically. People from all over the world visit the area (which is estimated to be second in visits after the Acropolis of Athens) following the ironic and absurd observation: what is good for people at the same time is bad for the environment! The increase in the concentration of local people and visitors in a limited space (narrow streets, narrow sidewalks, lack of parking spaces) combined with the amazing natural environment and the ancient holy place, call for more services, more built environment, more movements and more pollution at all levels (we hardly managed to prevent an Alumina Factory in the area, 1987) and on the other hand, the antiquities, require a peaceful and quiet surrounding.

Since today's Delphi seem to be somehow neglected, we aim to achieve sustainability for the specific area with the maximum possible respect for the antiquities, the environment and the needs of the people. Many studies and proposals for the area of Delphi have been submitted during the recent decades which are either too protective for the antiquities and therefore rejected by the inhabitants and local authorities, or aimed at the economic "development" of the area and of course have been rejected by Archaeologists, and the relevant Ministries.

Consequently, it is considered necessary to approach the area of Delphi from the perspective of Environmental Design that takes into account the most possible parameters and the data that exist, aiming to propose necessary activities aimed at the sustainable development of the specific area, resulting in specific action proposals for the authorities.

The steep slopes of the terrain have imposed the town morphology of Delphi. The orientation of the blocks is mainly southwest, with the exception of some small South oriented neighborhoods. This orientation provides an excellent view of the Pleistos valley. Also, the southwest orientation is ideal regarding the sunlight, the daylight and the heat gains.

Despite the monumental sights and natural beauty, the existing buildings of the contemporary town seem to be below the expectations of Delphi; rather because the village has been built in a rush. One of the aims of the present study is the investigation of the design problems and the proposal of rehabilitation solutions. The revitalization of the area can take place on three levels; the upgrading of buildings, the recreation of public spaces and the encouragement of social activities.

1.2 Some of the problems (the present situation)

Although Delphi is a small village of 1500 inhabitants, one of the most important problems is the lack of outdoor public spaces. The total area surface of the town is about 190 acres. Only 13% are used as open spaces and 20% are roads, and there is an uneven distribution of open spaces. As a result, a lack of green spaces, playgrounds and parks is observed.

The traffic jams are an important subject that creates problems, especially during summer period. The increased number of visitors has as a result a high number of vehicles

in the central part of the settlement and in front of the museum. As a consequence, a degradation of the environmental and aesthetic quality is observed. The average number of visitors, in the summer period, is estimated at 10000 persons per day. This number can reach 25000 persons per day at pick season. So, the carrying capacities of the roads network and of the parking facilities in the town are far exceeded.

At the entrance of the museum, near the archaeological site and other interesting points (Castalia Spring, Temple Pronaia etc.) the buses and vehicles are loading/uploading tourists and passengers. The parking area is of insufficient capacity for the daily number of visitors. In addition, the parking of vehicles and the large number of pedestrians, affect the operation of the highway. Therefore, congestion, noise, exhausts pollution, great risk of accidents is observed and they certainly create a serious problem to the area.

The National roadway crosses the town of Delphi. The two main local traffic roads of the town are the collector lanes of all vehicles. Also, the national roadway passes through these two roads. These roads are one-way direction and cross the other drive-ways and the pedestrian areas. As a result, heavy traffic and lack of parking characterize the two main streets of Delphi.

Because of this plan, the risk of accidents is increased. The majority of restaurants, souvenir shops, social and commercial activities are at these roads. An important number of inhabitants, pedestrians and tourists are crossing these roads.

The central square is one of the most important areas for the local society. It is regarded as the main area for local activities and entertainment events.

The layout of Delphi is characterized by only one square with limited uses. The position, the distance of the commercial center, the design, the access, the lack of shadowing and urban equipment, are some of the factors that cause the limited use. It seems to be situated rather outside the central activities of the city.

Lack of the necessary rest areas, urban equipment and of information centers cause difficulties to the visitors. Also, there is an absence of information signs to mark the important buildings and locations.

2 Methodology

The present study has been carried out by in situ investigation and observation of local morphology, activities, town geometry and functionality of structures. Also, a number of questionnaires were filled in by the residents and visitors. The aim of these procedures is to identify the problems regarding town planning and design and to suggest design proposals for a sustainable development.

We firmly believe that the places of attraction for foreign visitors are - or should be - the focus of particular research as well as particularly careful "development".

It is underlined here, that this study does not propose anything for the area of the antiquities, considering this as another, particular subject.

The survey results

A social survey with questionnaires took place during the summer of 2022: an updated social research on the environmental representations in the area of Delphi, of the public's environmental attitudes and perceptions of this particular charged area. 218 people participated in the survey: 98 residents, 64 foreign visitors, 56 Greek visitors.

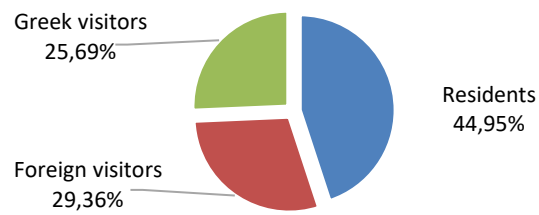


Fig. 1. Participants

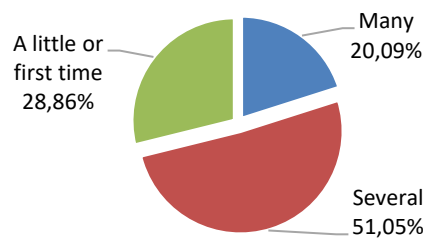


Fig. 2. Visitors. How often do you visit Delphi?



Fig. 3. Modes of transportation

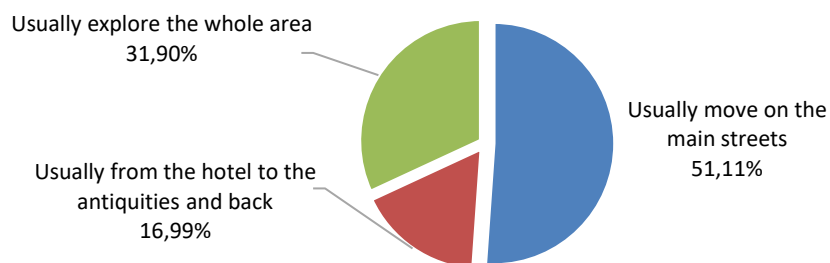


Fig. 4. Common routes in Delphi

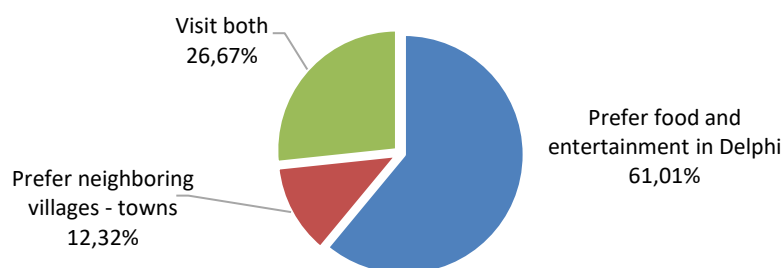


Fig. 5. Common areas for entertainment

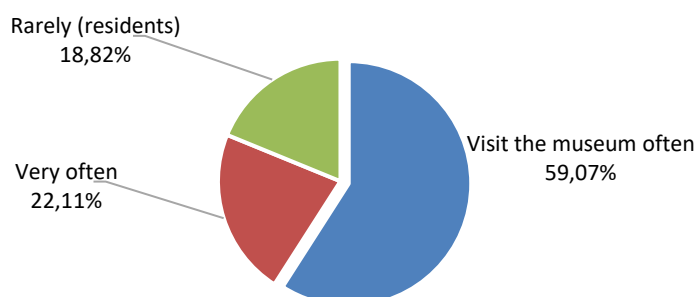


Fig. 6. Frequency of visiting the antiquities and the museum

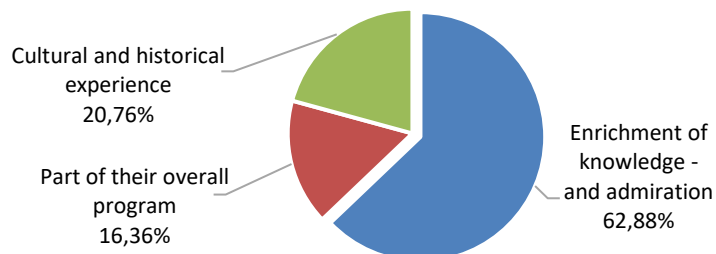


Fig. 7. Reason for visiting the antiquities

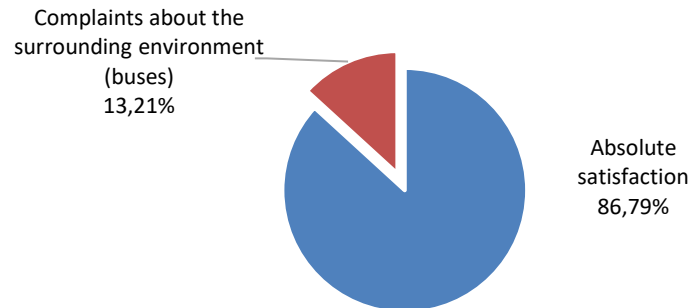


Fig. 8. Satisfaction from visiting an ancient museum

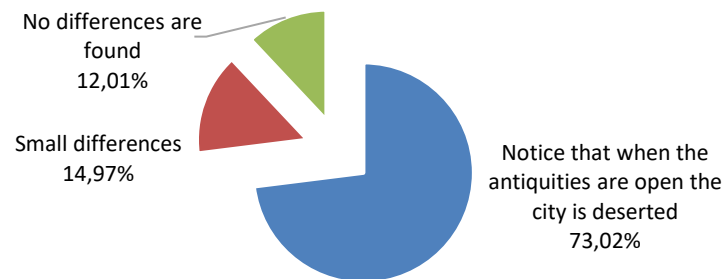


Fig. 9. Effect of antiquities on the life of the city

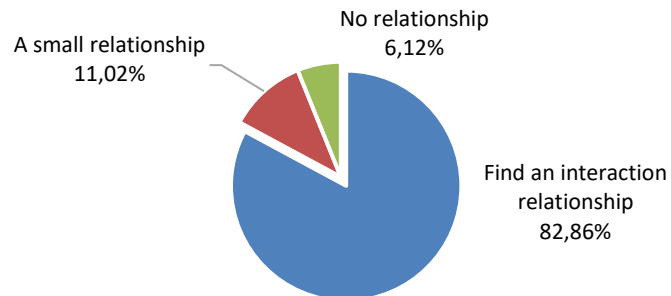


Fig. 10. Relationship between city and antiquities

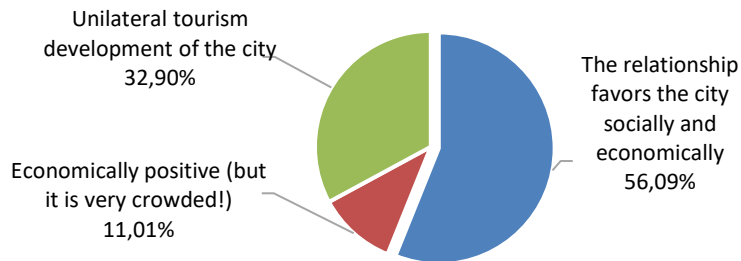


Fig. 11. Coexistence in favor of the city

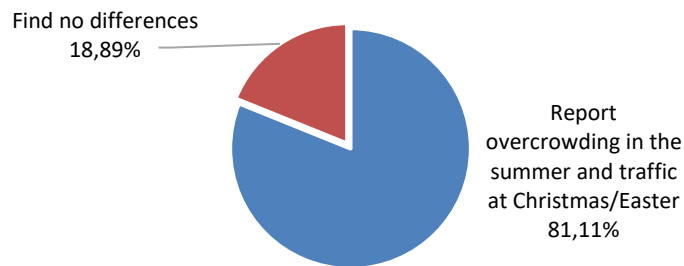


Fig. 12. Seasonal differences (visitors)

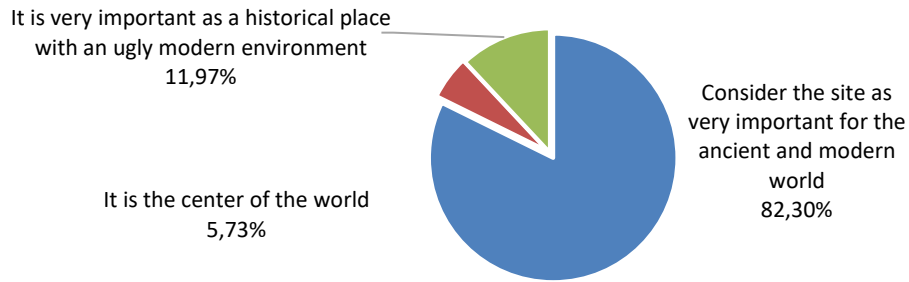


Fig. 13. What does Delphi mean to you?

3 Findings and Proposal

It is concluded that many visitors have come several times to Delphi. They combine cultural visit to the historical place with relaxation time for a coffee or a lunch in the central part of the town. They usually spend no more time in the town. So, an aesthetic development of the central road and the settlement is necessary. Also, the sustainable

design of the local facilities and partial re-designing of the settlement could help to a holistic upgrading of Delphi. The configuration of the settlement and especially of the open spaces could create new environmental friendly rest areas.

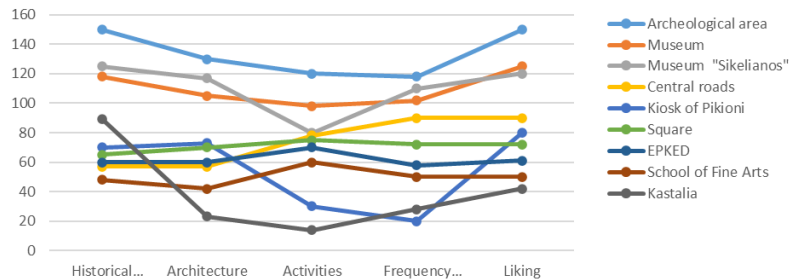


Fig. 14. Important places. According to the onsite investigation and the participants responses, the opinion of residents and visitors about the main visited areas, can be seen in this figure. ASSA (Applied Socio-Semiotic Analysis) Diagram according to Kosmopoulos (1991).

The important areas have been evaluated regarding the historical significance, the architecture, the activities, the frequency of use and the liking. The results of ASSA diagram can be obviously very useful at least to highlight the places mentioned, and the planning of visitors' new paths.

The aim of the paths proposed is to direct the visitors around the majority of the important places and to the town.

Proposals

In this part, the main proposals that have been submitted to the municipality of Delphi with the aim of the sustainability of the area are briefly presented.

It is emphasized here that Participatory Planning was implemented for the first time in Greece in the period 1983-1986, when one of the authors- as a consultant of the Municipality of Delphi-had gathered all the interested residents every Sunday morning at a central cafe, with a large map of the area stuck on the wall, to discuss the problems of the extension of the Delphi city plan, and to hear opinions about how they are affected by the possible proposals, and try to give solutions.

The final text and plans have been submitted to the Municipality of Delphi and the Ministry of the Interior (1986).

In order to revitalize Delphi, and to provide some of the respect that the place needs, we propose the following:

- The National Road through the antiquities road separating them into two parts, and also through the narrow streets of the town. The creation of a by-pass of Delphi and the antiquities in order not to isolate and destroy completely Delphi, providing also easy access to the antiquities and the town.
- Actions for the re-opening of Kastalia (spring and rest-area) and also re-opening of the Gymnasium and the Stadium among antiquities as the visitors demand.
- The construction of an open contemporary amphitheater is also proposed by the local authorities.

- d. The establishment of a Post Graduate Course in Delphi, related to the Hellenic Civilization, is a proposal not only of the local authorities, but also of many international academicians.
- e. Pikionis' pavilion should be much more promoted.

The development proposals for Delphi must contribute to the following:

- To bring out the cultural history and especially the archeological site.
- To bring out the natural environment.
- The protection and emergence of open and green space.
- The planning of land uses and local activities, which can lead to the development of local economy.
- The satisfaction of the visitors.

The key to the problem is to pay attention to the contradiction between antiquities protection and antiquities access. In particular:

- New main road that will be planned on the perimeter of the city and the antiquities, and will not pass through them, but as adjacent as possible, in order not to isolate Delphi from visitors!
- Secondary road for access to the antiquities and the museum.
- Urgent response to the parking problem of both cars and tourist buses both for the area of the antiquities and for the area outside the city.
- Development of a pedestrian network from the city to the antiquities and vice versa.
- Electric vehicles for visitor's transport.
- Urgent resolution of environmental problems:
 - (1) waste management,
 - (2) landslides in specific areas,
 - (3) soil erosion,
 - (4) use of renewable energy sources, both photovoltaics and wind turbines (of course out of sight of the settlement and the antiquities) since the orientation and the wind and solar potential of the surrounding area guarantee excellent results.

Measures for the future:

- (1) continuous supervision of the implementation of the building regulation adapted to the special conditions of the area (shape, height, slope of the plots).
- (2) measures for the problem of traffic and parking of both small and large vehicles.
- (3) new Master Plan for the Delphi area which will both prevent the growth of already existing problems and propose effective solutions for the sustainable development of Delphi.

At the eastern entrance of the town, a new square has to be designed at an already existing unexploited space. Many functions of the settlement already take place close to this area:

- Commercial activities: the junction of the two central shopping streets are at the area.

- Administrative facilities of the local authorities, located near the City Hall, the Cultural Center and the building of OTE (Greek Telecommunications Authority).
- A path that connects the town with the archaeological sites.
- Cultural functions: an ideal point of view of the Delphic landscape and a traditional history point e.g. fountain "Tzaferi", the old mill etc.

Disabled accessibility

An important factor of the design is the safety and accessibility of disabled people. The visit and accommodation of people with disabilities should be facilitated at the museum, the archaeological areas, for the access to them and in the open spaces. Also, all of the required services should be provided. The installation of specific signaling and marking, the special configuration of the parking are some of the legislation requirements, in order to facilitate the movement of persons with disabilities. The relevant requirements include special measures such as emitting beeps devices, swipe points on public spaces and more.

Pedestrian network

The design of pedestrian networks aims at the integration between the existing and new open spaces, the central parts of the town, the archaeological areas, the museum and the natural sights. The route design of the pedestrian networks aims to facilitate the visit of the archaeological and historical monuments, to enjoy the natural environmental beauty and to boost the local commercial activities. Benches, planting, water elements, informational signs which highlight the cultural continuity of tradition and modern history will enhance the using of pedestrian networks.

Restoration of traditional buildings facades

Aiming at the sustainable development of Delphi, a restoration of some selected traditional buildings or even the improving of newer buildings facades are suggested. Specifically, repair and color restoration of the buildings facades are recommended.

Parking facilities

The creation of at least two new larger parking places is urgently needed, just at the outskirts of the town, before the entrance, and immediately after the town.

Urban equipment

The urban equipment in the open spaces of Delphi will have to be replaced and increased. More benches, trash bins, shadow systems, billboards for local information have to be placed in the central roads, at the square, the parking and at walk sides. This equipment ensures comfort conditions to the pedestrians and visitors and informs them about the historical and cultural monuments and natural environmental sights. So, it contributes to the sustainable development of the town and the great sightseeing tour along the archaeological areas and the contemporary cultural heritage monuments. The materials and the urban equipment have to be both harmonized with the aesthetics and

architecture of the town's landscape. Also, disabled accessibility has to be taken under consideration. It is important for residents and visitors not to intermix the use of limited pedestrian and walk side areas, with cars' traffic and parking.

Open spaces

The design of open spaces may revitalize the town, increase the social interaction between the residents, improve the microclimate conditions, the thermal comfort conditions and the aesthetic environment. The upgrading of the existing open space and the environmental design of new areas in Delphi aims at the holistic approach of the archaeological sites, the settlement itself and the natural environment sightseeing.

Proposed visitors' paths

The walk sides around the archeological area, cultural monuments, natural sightseeing and town of Delphi will attract the interest of the visitors to spend more time in the area and to learn more about the historical heritage. It also benefits the local society and the commercial activities. An extended tourist season may create the optimum conditions for sustainable and economic development.

The walk sides must be free of obstacles, distinct by labels on pedestrian crossings.

Trees, vegetation, shadowing systems in resting and information points, benches and faucet for water will have to be incorporated in the upgrading. Night lighting should ensure the safety and the accessibility during afternoon time and bicycle lanes should be designed.

- The existing sidewalks could be maintained and extended in order to facilitate visitors. The routing can include: the path from archeological area to the town, which is located at the north side of the town and ends to the "Sikelianos" museum.
- the walkways that will connect the proposed parking spaces.
- a tour by vehicles/electric cars from the pavilion "Pikioni", the European Cultural Center of Delphi (EPKED), the olive grove, the settlement of Chrisso, and the ancient walls of Krissa.
- the ancient path: Kirra - Chrisso – Delphi.
- the international European path E4: Delphi - Agoriani (Eptalofos).
- the path: Delphi - Avgo - Corycian Cave.
- the path: Delphi - Pleistos river - Desfina.

The intersection of routes will be in the commercial center of the town, in order to boost the local society.

Maintenance and enhancement of Pikioni's pavilion

The preservation, repair, and maintenance of the building are of urgent importance and will contribute to the redevelopment of the pavilion as an exceptional entertainment site, just like it has been previously done with the restoration of Sikelianos house (1991) and its current use as a museum.

Cultural activities

The local population deals with a range of cultural and commercial activities. A proposed cultural and information center will shelter the local agencies and will offer information to the visitors about the history, the culture, the local society and the local commercial products. It is also hoped that the much-needed upgrading of the European Cultural Center of Delphi (EPKED) will be used to promote the conference tourism and thus new job offers and activities will be created.

Notice: All of the proposed measures, are based on today's existing environmental, planning, and archaeological legal framework, so that they might actually be implemented.

4 Conclusions

Except for summer, Christmas and Easter, during the other months of the year, Delphi seems to be neglected, therefore, the exceptional place of Delphi has to be more promoted and supported by tourist policy makers.

The aim of this study has been the investigation of the present situation in Delphi and the proposal of ideas for a sustainable development. The parameters and the conditions to achieve this goal are the development of the area, the comfort of the residents and visitors, the protection and emergence of the natural environment and of course the protection of and the accessibility to the archeological areas.

5 Acknowledgments

Many thanks to the members of K-ecoprojects, with my best wishes.

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