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**Centre du patrimoine mondial
World Heritage Centre**

Libyan Arab Jamahiriya

Archaeological sites of

Sabratha

Site inscribed on the World Heritage List: C 184 rev.
Year 1982, Criteria (iii)

and Leptis Magna

Site inscribed on the World Heritage List: C 183 rev.
Year 1982, Criteria (i), (ii) and (iii)



Reactive Monitoring Report

January 18-28, 2007

by Mounira BACCAR and François SOUQ

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3. Our thanks addressed to the Kadhafi Foundation that was attached to attend and help during the process of this mission.
4. We thank the UNESCO Office in Rabat for authorizing this mission.

1. CONTEXT AND OBJECTIVES OF THE MISSION

At the invitation of the Libyan government, a joint mission of UNESCO – World Heritage Centre went to Libya, to Tripoli, Leptis Magna, Sabratha and Cyrene from 18 to 28 January 2007.

This reactive monitoring mission was composed by Mrs. Mounira Baccar, Program Specialist from the World Heritage Centre, and Mr. François Souq, consultant from the World Heritage Centre.

The mission permitted to evaluate the general state of conservation of Libyan sites inscribed on the World Heritage List.

Work method:

The work method was elaborated in three types of activities: consultation of documents, meeting with the different responsible of the properties and field visits.

The mission also organized several working groups with the different responsible bodies in Tripoli, Cyrene, Leptis Magna and Sabratha. Dr Giuma Anag, President of the Department of Antiquities and his staff, representatives of the Ministry of Trusteeship and of Tourism, represented by the Director of international cooperation, the representative of the National Commission, the architect in charge of the Islamic Museum in Tripoli, Mr. Ahmed Lakhdar, responsible of the historical cities on behalf to the Khadafi Foundation, Eng. Oussama Zlitni.

We met with Mr. Guerrin-Jabbour, Cultural Counselor to the French Embassy in Tripoli. We also met with Mr. Luca Cosentino from company ENI North Africa BV, at the request of the president of the Department of Antiquities, as this company is at the present time financing and implementing a large project of “Archaeological Park in Sabratha”. A description of the project was given to us by the D.O.A. We were able to analyze the content of the project and express few remarks (compelled in annex) that will be transferred to the D.O.A. In Leptis Magna, we proceeded with a museum and site visit, along with the site curator, Mr. Mohamed Ben Massoud, director of the Museum, and two specialists.

2. SABRATHA

2.1. DESCRIPTION OF THE PROPERTY

The archaeological site of Sabratha is located in the district of Zawia, in Libya. Situated on the Tripolitanian coast to the west of modern Tripoli, Sabratha was one of the cities of the ancient triad, composed of Sabratha, Oea (Tripoli) and Leptis Magna, which gave the name of “Tripolitania” to this territory. Sabratha was originally a simple Phoenician trading post, perhaps dating back to the seventh century B.C. Due to the geographical layout of the coastal area, its wealth particularly resided in the presence of the great trade route which linked the oasis of Ghadames to the centre of the town. Thanks to this passage, Sabratha could provide wild animals and exotic goods upon which its prosperity was acquired. During the mi-second century B.C., Sabratha passed on under Numidian and then Roman domination.

With the reorganization of Africa by Caesar, Sabratha was integrated to the new province of Africa Nova and the city benefited of the influence of Roman culture. Numerous renovations and constructions are undertaken during this period. The expanse of Sabratha was largely spreading when it was raised to the status of colony by emperor Antoninus Pius (138-161 A.D.).

The peaceful and prosperous situation of the town was interrupted by the attacks of the Austuriani in 363-365 A.D. In spite of its past greatness, Sabratha did not manage then to recover from the numerous destructions after so many devastating incursions. When the Byzantine walls were erected during the sixth century A.D., the city had already been boiled to the Forum and its surrounding blocks. Sand then began to cover up the city. At the time of the Muslim conquest, the city was almost abandoned.

Excavations undertaken in Sabratha allowed to recover Phoenician and Punic remains along the coast and in the huge metropolis that spreads in its vicinity. The Romans and Byzantine Monuments, the Forum, the Temple of Antoninus Pius, the temple of Serapis, the temple of Isis, the amphitheatre and the theatre are as many landmarks of the history of classical architecture in Africa.

The archaeological site of Sabratha was inscribed on the World Heritage List on the basis of criterion (iii) in 1982.

2.2. MAIN THREATS IDENTIFIED IN PREVIOUS MISSION REPORTS

The principal identified problems affecting the property are the following:

- The boundaries of the property and the related buffer zone are not defined;
- Most of restoration operations were undertaken with inappropriate materials;
- Limestone used in the majority of ancient construction are strongly damaged because of the action of climatic phenomena;
- Certain parts of ancient buildings (thermal baths of the sea) collapsed under the action of coastal marine erosion;
- Floorings (mosaic) are damaged by the development of natural vegetation ;

- On-site safeguarding must be improved, explanatory panels and educational supports are defective.

2.3. STATE OF CONSERVATION

2.3.1. The boundaries are still unclear

- At the time of the inscription of the property, the World Heritage Committee Office (see: World Heritage Centre-CLT-82/CONF.014/6) required the State Party to “define the limits of the zone of protection and make available an urban development plan for the new town which provide for the safeguarding of the archaeological site”.
- The ICOMOS evaluation report (184 – May 1982) wished for complementary precisions defining « the intended perimeter of the zone of protection and the means by which this protection will be undertaken (...) the limits [of the zone] are not precisely defined, namely to the south-west of the temple of Isis and to the east of the southern baths. Furthermore, it would seem that the remains of the aqueduct (...) have not been wholly taken into account. (...) ICOMOS would like to have in its possession recent information (...) on the work effected and the projects for the development of the southern zone, where a museum and its parking lot, built some time ago, have reduced archaeological reserves which would be, above all, important to evaluate. ».
- The World Heritage Centre mission which took place in 2003 noticed that « the boundary of the UNESCO site, which ought to coincide with the enclosed archaeological area, is still unclear ». It mentioned a « green buffer zone around the ancient settlement [that reduced] the visual impact of the modern city ».
- The enclosed area includes indubitably the World Heritage site. However, the ancient city and its necropolis extend quite beyond towards South and West. Discoveries of the aqueduct mainly destroyed since then, and of the funerary complex of Sidret-el-Balik, whose wall paintings dating from the fourth century A.D., are probably unique in the Mediterranean world. They constitute examples of remains which should be taken into account in the global management of the site.
- It becomes extremely urgent to specify the exact extent of the property and the correspondent buffer zone in order to control the urban development and its encroachments on the ancient site.

2.3.2. Damages due to climatic conditions

- Sabratha is located in sea front. It is particularly exposed to the action of wind carrying marine salts and sand which have a disastrous effect on principal building material employed in antiquity: limestone. Whereas it was initially covered, and thus protected with marble or coatings, its exposure involves an accelerated degradation.
- It is essential to start petrographic and geochemical studies in order to define the processes which would allow minimal conservation of the built structures currently disaggregated. Solving this problem is the first condition for conservation of those remains.

2.3.3. Damages due to maritime action

The action of waves gradually leads to the destruction of monuments in contact with the beach: Thermal baths, Temple of Isis. The protection walls and the ripraps which protected this part of the site could not ensure completely their role. It appears essential to rebuild them and above all to organize regular maintenance and fast repairs. Their aspect will have to be as neutral as possible in order not to denature that of the contiguous remains.

2.3.4. Damages due to inappropriate restorations

- The old restorations were carried out with gray cement. If the aspect of recent restorations is more suitable (except in the frequent cases of saline efflorescence which reveals the use of unsuitable sands in the mortars), their mechanical effect is also destructive. They constitute as many watertight barriers that coat the original sandstone. The difference in porosity between materials incurs stagnation of water at their interface and accelerates the erosion of the stone. Alveoli that are soon to become cavities are forming in the stones constituting the walls.
- The fragility of the original stone and the aggressive action of the climatic agents, are aggravating factors. Consequently, usually used recipes of hybrid mortars that let the surface breathing are probably not sufficiently dealing with this question. Preliminary specific studies must be implemented to find the adequate technical solutions.

2.3.5. Vegetation and sand

- It appears to us that growth of vegetation on the site is efficiently controlled in the peripheral zone. A reasonable use of this area as pasturage can not harm the hidden remains.
- In the built sectors, particular attention has to be given to the decorated floors (mosaic) by treating the development of vegetation with chemical means, in order to avoid the dissociations of tesserae during “mechanical” cleanings and to eradicate the roots which would lead to regrowth.

- Generally speaking, the mission noted the good state of environmental maintenance, including in the management of the wind-born sand. No degradation due to the visitors was identified.

2.3.6. Management of facilities and tourism

- The mission has not been able to visit the museum and the technical buildings of the site. A visit will be necessary in the near future in order to evaluate aspects concerning presentation to the tourists. However, a project of installation of an archaeological park on the site, in partnership with the Foundation Khadafi and Company Eni, was exposed to us in Tripoli. It previews the implementation of tourist facilities, marked out circuits and the extension of the museum. One will refer in appendix III that provides a brief analysis of this preliminary draft that still needs to be specified. This file that reveals intentions of sustainable tourist development will have to be presented to the World Heritage Centre before any implementation is undertaken.

2.3.7. Management plan

- It is essential that a management plan is established for the property in order to coordinate the planning of conservation and restoration operations and define legal measures of protection and their methods of implementation on the site and the buffer zone. This must take account the archaeological potential of zones adjacent to the enclosed part of the site, in order to allow the control of new buildings encroachments and to ensure the management of impacts of the urban development of the modern city.

2.3.8. Personnel affected to the site

- The mission could not meet the controller in charge of the site because of the brevity of its stay. Questions of adequacy of personnel, in number as well as in specialties, could not be tackled. It will be necessary to reconsider those questions later on.

2.4. CONCLUSIONS AND RECOMMENDATIONS

2.4.1. The mission note with satisfaction that:

- The environmental maintenance of the enclosed site is satisfactory;
- A project of archaeological park, which should allow a better development of the remains and sustainable management of the site, is being initiated.

2.4.2. However, it appears necessary to :

- Specify the boundaries of the property as well as its buffer zone,
- Set up a global management plan of the property,
- Manage the modern constructions encroachments on the archaeological site,
- Attempt to regulate in a perennial way the attacks to the integrity of the site due to climatic agents. In that sense, and before implementation of any restoration program, it is essential to define the necessary methods of conservation which can respond to the very particular conditions of the site: the fragility of sandstone used in ancient constructions opposed to the specificity of climatic agents to which this material is submitted, constitute extreme conditions. We encourage the State Party to request for international assistance in that field.

2.4.3. RECOMMANDATIONS :

- To define the exact limits of the World Heritage property, as well as the buffer zone, on the basis of a recent cartography that identifies archaeological elements, ground installations and recently built facilities as well as constructions surrounding the property.
- To implement the necessary measures for the control of urban development at the periphery of the property.
- To draw up a management plan for the site and implement it as quickly as possible, in accordance with paragraph 108 of the *Operational Guidelines for the Implementation of the World Heritage Convention*.
- To inform the World Heritage Centre on new projects, such as the creation of an archaeological park.
- To carry out preliminary studies on restoration techniques to be implemented in order to ensure the continued existence of the uncovered architectural structures built of sandstone, taking into account of the exceptional climatic constraints.
- To resume the construction of walls of protections of the monuments threatened by the encroachments of the sea.
- To set up an information program for local public to make them aware of the fragility of the property and of the advantages for everyone of a well maintained and pleasant property.

3. LEPTIS MAGNA

3.1. DESCRIPTION OF THE PROPERTY

The archaeological site of Leptis Magna is located in the district of Khoms, in Libya. It was inscribed on the World Heritage List in 1982, on the basis of criteria (i), (ii) and (iii).

Located at the mouth of the Wadi Lebda, on the Tripolitanian coast, the regular port of Leptis Magna develops originally thanks to trans-Saharan caravans. Unlike Sabratha and Oea, Leptis was not separated from the hinterland by the Gefara plain. Instead, the curving mountainous range of the Gebel swung northward to approach the coast directly behind Leptis. It was here that the farming of olive trees met such success that it made of Leptis one of the largest centers of the production of olive oil in Africa.

Originally Phoenician and Punic city, Leptis Magna is integrated to the Roman Empire during the first century B.C. but its destiny became exceptional during the second century A.D. after one of its native sons, Septimus Severus, became emperor in 193. He initiated a building program which was to transform Leptis into one of the most splendid cities of Roman Africa. The first evidence of this new program is found in the imposing four-sided arch dedicated to Severus, the *Cardo* and the *Decumanus* mark the beginning of this building program. But the magnificence of the new Leptis was obtained at the cost of stability. Leptis definitively succumbed to the second wave of Arab conquest, one of the Hilalians, during the eleventh century. Deserted by its inhabitants, it was left buried up by sand.

Leptis Magna is a unique artistic realization in the field of urban planning. The city, constructed during the reign of Augustus and Tiberius but entirely remodeled under the Severan emperors, incorporates major monumental elements of that period and of a new Roman art, strongly influenced by African and eastern traditions. Leptis, which was rediscovered in the seventeenth and eighteenth centuries by travelers such as Durand and Lemaire, has played a major role in the movement of return to the antique and in the construction of the Neo-classic esthetic. It bears the testimony of a lost civilization.

3.2. MAIN THREATS IDENTIFIED IN PREVIOUS MISSION REPORTS

The principal problems affecting the property identified in previous mission report (World Heritage Centre-François SOUQ-2006) are the following:

- The delineation of boundaries of the World Heritage property and of the related buffer zone should be undertaken as quickly as possible. It must include the coastal villas of Wadi Tala, which are indissociable from the site.
- Inadequate restoration methods cause saline efflorescence on surface of remains. The latest restoration operations carried out on the Severan arch have avoided this error.
- It is necessary to undertake hydraulic studies to identify the necessary measures to neutralize flooding that regularly affects the site of whose latter effects have

been efficiently handled. It will be suitable to consider the frequency of that risk before envisaging damming up that would alter completely the authenticity of the site.

- The uncontrolled growth of vegetation in the private housing sectors of the ancient city and in the outlying sectors has to be controlled. This incurs the reinforcement of maintenance personnel.
- A global management plan should be established.

3.3. STATE OF CONSERVATION

3.3.1. The Mission would like to note the good general state of conservation of the site and confirms its criteria of authenticity.

3.3.2. The delimitation of the property should be precisely established.

- The ICOMOS evaluation report (184-May 1982) notices that “The inscription of Leptis Magna (...) would guarantee the integral protection of the archaeological site, the definition of which is at once imprecise and seemingly too restrictive. The zones of the necropolis, the fortifications of the Merghheb and the Hammam, the settlements scattered in lands behind Leptis should be protected (...)”.
- The urban development in the South and West of the enclosed zone is at the detriment of the necropolis, the external fortifications and the rural ancient villas. It is urgent that the delimitation of the property and the buffer zones is established and that legal measures of protection are ensued from it in order to safeguard and developed the remains that have not been destroyed yet.
- The coastal villas, in particular, the Silin Villa whose state of conservation is remarkable, must be integrated to this policy of protection and presentation to the public.

3.3.3. Management plan

- It is imperative to coordinate the policy of development of the property by establishing a management plan in the medium-term that will permit the planning of conservation and restoration operations to be undertaken as well as presentation of the remains to the public. It will specify the legal dispositions of protection defined by the State Party and their application methods on the property and the buffer zones. It will have to allow the control of encroachments due to urban development of the modern agglomeration.
- It will have to envisage necessary measures to face the expected increase of the number of visitors, for presentation (general aspect, visit tours, museums,...) as well as development of personnel resources (number and training) to appoint to the site management.

3.3.4. Damages due to inappropriate restorations

- The mission noted that old restorations methods were inadequate and will have to be gradually resumed: the use of sea sands in the mortars is the cause of efflorescence's appearance. The mission noted the improvements in the methods used for the work carried out on the Severan arch. Reassembly and anastylosis work on a Mausoleum in the museum court are being carried out by a Franco-Tunisian team in the respect of the recent restoration standards.

3.3.5. Work related to the presentation of the site

- The authorities undertook to clear open air areas (basilicas, forums, etc.) from ancient architectural elements which are stored there in order to offer a better reading of those remains. One will encourage them to maintain this action which must include a precise inventory of the blocks. It would be better to articulate it with scientific studies on the correspondent architecture.
- Previewed restoration work (even of anastylosis) will have to be undertaken with respect of the criteria of authenticity of the site. For example, it is not desirable to rebuild the colonnades of the street connecting the ancient city to its port. On the contrary, it is advisable to leave in the state the collapsed structures that testify of the violence of earthquakes that affected Leptis during Antiquity and this testimony is essential for the good comprehension of its history.

3.3.6. The vegetation

- The mission observed the clearing of undergrowth undertaken on the whole site and particularly on the non-excavated parts. It is advised to be attentive that this work is not completed in a too severe way because it could deteriorate the global perception of the cultural landscape which is one of the criteria of authenticity of this site.
- Generally speaking, vegetation regrowth, following recent precipitations, must be controlled in the streets and on various public spaces. This type of vegetation cannot be, and does not have to be completely eliminated. One will have endeavor to a balanced result which will offer a general impression of cleanliness without falling into an extreme completely mineralized aspect.

3.3.7. Flooding of the Wadi Lebda

- Since 1987, serious damages were caused by the flooding of Wadi Lebda. The alluvia and sands brought at this occasion were correctly cleaned, giving back its integrity to the site. Before undertaking heavy work to solve problem that could denature the general aspect of the site, it is necessary to undertake a general hydraulic study in order to propose perennial solutions. If the

occurrences of the risk appear to be low, one could stick to light adjustments and adopt an a posteriori management of the floods consequences.

3.3.8. Facilities and tourism management

- The museum at the entrance of the site allows good comprehension of the remains through a clear and didactic presentation. A mediation policy adapted to schools and inhabitants is actively conducted. One can only appreciate its well-founded and encourage its development. The forthcoming opening of a museum devoted to mosaics, in existing buildings, will allow to reinforce this approach.
- The presence of on-site facilities receiving archeologists' work and a restoration laboratory must be noticed. The know-how developed here allows a better global management of the property.
- The increase of the number of visitors on the site is obvious. It can only maintain its growth with the proximity the capital, Tripoli and the development of international tourism. It is necessary to prepare already the necessary measures intended to adapt the site installations, on reception facilities as well as humans resources (safeguarding, technicians for maintenance and restoration) or even on the policy of presentation of remains (visit tours, explanatory panels, etc.) to ensure a perennial and harmonious management of the site, with respects of the criteria of authenticity of the property.

3.4. CONCLUSIONS AND RECOMMENDATIONS

3.4.1. The mission notes with satisfaction :

- the good general state of conservation of the central area of the site,
- the positive evolution of restoration methods,
- work of clearing and evacuation of blocks stored on public areas of the site,
- Cleaning of undergrowth undertaken, even if it should be a little less radical in the future,
- The aspect of the collections presented at the museum, which supports the good understanding of the remains, as well as the policy of mediation with schools and local populations also ensure by the museum,

3.4.2. However, it is necessary and urgent :

- To specify the limits of the property as well as its buffer zone,

- To set up a management plan,
- To manage the encroachments of modern constructions on the archeological site,
- To resume gradually the old and inappropriate restorations (on the theatre for example),
- To control the development of the vegetation in the ancient housing districts,
- To launch preliminary studies necessary to deal with the flooding of Wadi Lebda and its consequences on the property itself,
- To set up a management policy of the site in preparation of the previewed increasing number of tourists,
- To reinforce the staff appointed to the site, in number (safeguarding, maintenance, restoration) and in quality (installation of a training program).

3.4.3. RECOMMENDATIONS :

- To define the exact delimitation of the World Heritage Property as well as its buffer zone, by including the necropolis, the fortifications of the Mergheb and the Hammam, the scattered habitat of the hinterland and the coastal villas.
- To take necessary measures for the control of urban development at the periphery of the property.
- To draw up a global management plan of the site and quickly implement it, in accordance with paragraph 108 of the *Operational Guidelines for the Implementation of the World Heritage Convention*. This plan will have to take into account the previewed augmentation of visitors on site as well as the necessity to reinforce the staff appointed to its management.
- To undertake a preliminary study to deal with the problems caused by the flooding due to the rising of Wadi Lebda and to find solutions that could be implemented with respect to the authenticity of the site.

4. ANNEXES

- ANNEX I. Illustrations,



Figure 1 Sabratha Sign at the entrance of the site



Figure 2 Sabratha – the museum



Figure 3 Temple of Isis, erosion of structures caused by the sea



Figure 4, Sabratha Mosaic floor



Figure 5 Sabratha Deterioration of sandstone constructions



Figure 6 Sabratha, recent urban encroachment on the site



Figure 7 Leptis Magna Reception of the visitors



Figure 8 - Leptis Magna – One room of the museum



Figure 9 Leptis Magna Explanatory panel on the Arch of Severus



Figure 10 Leptis Magna – Forum of Severus



Figure 11 Leptis Magna – Remounting of the mausoleum in front of the museum



Figure 12 Leptis Magna – Street



Figure 13 Leptis Magna Theatre Saline efflorescence



Figure 14 Leptis Magna – Vegetation of the housing areas



Figure 15 Leptis Magna Guard sentry box (close to the amphitheatre)

ANNEX II

Note and remarks on the Project of Archaeological Park of Sabratha
Original version in French, translated into English
February 2007

1. Introduction

- 1.1. The two concerned documents are files with succinct presentation of the implementation of an Archaeological Park on the site of Sabratha.
- 1.2. The first one dates of May 2006 and determines guidelines for the project. The second was compiled at the beginning of January 2006 and produce few complementary elements including project for tourist itinerary project and preliminary actions of renovation and construction.
- 1.3. The whole project remains vague in its definite objectives, means and planning. It is difficult to give a definitive opinion on such project for with so many precisions are needed.

2. Present condition of the project

- 2.1. The stated objectives of the project of attractive:
 - To contribute to the restoration and conservation of the site
 - To create new opportunities of activities in the field of restoration and archaeology
 - To encourage “sustainable” cultural tourism
- 2.2. Precisely, the project propose:
 - To use and valorise the existing constructions
 - To improve the current aspect of the site with respect with its environment
 - To improve the security of archaeological remains
 - To rebuild and restore the sanitary and technical infrastructures already on-site
- 2.3. The intervention planning previews:
 - 2.3.1. Civil Engineering:
 - Implementation of a 5km fence to protect the site from sight with two new entrance doors and a new alarm system including video network

- Use of existing water and electricity installations and adaptation to the new project
- Lighting program for the Sidret El Balik
- Modifications in the Museums:
 - Enlargement of both Archaeological and Punic Museum
 - Interior and exterior renovation, security adaptation of access
 - Reparation of the Archaeological museum roof
- Construction of four or five bathroom structure on-site
- Restoration of offices and guard corps
 - Transformation of offices in welcome zone and ticket office for public (and transportation to temporary buildings of controller's offices)
 - Restoration and enlargement of the guest house (?)
- Landscape study of the site and necessary maintenance
- This facet of the project will be undertaken by a general construction enterprise under control of ENI

2.3.2. Archaeological facet:

- Conservation and preservation (archaeological excavation are not included in this project)
- Petrographic analyses in laboratory (in order to identify the possible protection actions)
- Preservation of the temple of Serapis with construction of a protective structure (steel and glass)
- Intervention on the Bath of the sea: reflexion on the strategy to adopt (remounting of collapsed structures, protection against marine aggressions)
- Additional interventions still to be defined
- This facet will be coordinated and undertaken by the University of Palermo (program still to be defined)

2.3.3. Fulfilment facet:

- Implementation of two tourist itinerary
- Publication of two tourist guide, and possibly of one scientific publication
- Cultural initiatives: still to be defined by the Steering Committee (documentation centre, website, etc...)
- The documentary part must be prepared by the University of Palermo

2.4. Planning of the project:

- Preliminary studies (2005-2006)
- Phase 1: Civil Engineering work (4 years)
- Phase 2: Reorganisation of Museums and storage facilities...to be started before the end of phase 1

- Preparatory meeting May 2006

2.5. Management of the Project

- Director Committee and Operational Committee

3. Observations:

- 3.1. It appears that the project is conceived for in a minor part of the real extension of the site: only in the presently excavated and enclosed zone. Here can be recalled the interrogations expressed by ICOMOS at the time of the inscription of the site – “ (...) *waiting for complementary precisions on the envisaged area of protection (...)*” – and the latest requests expressed by the Committee for precision of the boundaries delineation of this World Heritage Site. In the framework of the implementation of permanent and wide infrastructures as well as temporary, it would be desirable to integrate this project in a larger view of the site.
- 3.2. It would be requested that the previewed work, that have an impact on the aspect and authenticity of the site, would be integrated to a global management plan in the field of World Heritage. This project could even be part of that a long-term management programme.
- 3.3. The construction and civil engineering facet seems relatively advanced:
 - Enlargement of Museums,
 - Modifications of offices and welcome zone
 - Construction of bathroom
 - Implementation of fence and access
 - Restructure of water and electricity networks

This work are altogether preliminary actions that will have to be inspected in details on the architectural quality and integration to the site itself as well as specific need for which it responds. The previous definition of a specific program for needs in the exhibition spaces and the reserves, even for annexes, as administrative spaces and laboratory for restoration will be necessary. The architectural programme will probably have to be revised for a harmonious insertion with ancient remains.
- 3.4. The project of edifications of new fence has not been determined in details. Some thoughts have to be given to justify this construction, the layout and aspect considering the total surface of the site and the constraints of adaptation to existing landscape.
- 3.5. The archaeological impact of extension of existing building or building of new constructions has been completely ignored. ICOMOS's report on the site nomination already noticed that “ (...) *in the southern zone, the old establishment*

of the museum and the corresponding parking restricted some archaeological reserves for which preliminary evaluation would have been necessary.” If the present projects were definitely retained, one (or several) preventive archaeological intervention(s) would be necessary in order to preserve a scientific and patrimonial records of remains destroyed by the construction work.

- 3.6. The Operational Steering Committee is only composed of constructors (architects and project managers) with the exception of one site controller. Archaeological and patrimonial dimension are under-estimated. It would be desirable that the Steering Committee includes museum and preventive archaeology specialist in order to rebalance the general view of operations undertaken on an archaeological site that has to be presented to the public. At last, it seems really dangerous to assign the development of construction work, having a large impact on the site’s heritage, only to a general public construction firm.
- 3.7. One can wonder about the long-term conservation of the previewed constructions: no action has been planned for their maintenance (in material and personnel needs) that will be an important amount of work for the coming years. The reorganization of technical areas doesn’t appear to be considered; however we know that those constructions are necessary to the efficient conservation of remains.
- 3.8. If the propositions for the Civil Engineering are quiet important, the same concern was not applied to the archaeological facet. It has, however, been previewed to implement conservation action as:
 - To undertake Petrographic analyses to identify the possible methods of protection but we don’t know yet if such operation have been planned yet.
 - To built a protection structure for the temple of Serapis; we would express most extreme reserves on the steel-glass construction choice taking into account the marine corrosion and thermic impacts.
 - To study the possibilities of remounting some recently collapsed parts on the bath of the Sea, as well as measures of protection against marine erosionSpecific studies are previewed on degradations due to marine erosion (saline ambiance and attacks from the sea), they are primordial and have to be encouraged. The implementation of conservation actions must to be explained in details. The specificity of the site in this field must provide possibilities of development of competence for local specialists that could be useful to the conservation of other seaside sites. It seems really important to implement a research and training unit that would benefit from the experience of international laboratory and missions.

4. Conclusion

- 4.1. The present project remains imprecise in the identification of needs as well as defined objectives as well as the programme to be implemented to respond to

them. The planning must be explained and financial possibilities precised with regard to the objectives. The contractual documents must precise those elements as well as decision mechanisms and afferent control.

- 4.2. It would be desirable to review the composition of the Steering Committee in order to include experts in museography, conservation and preventive archaeology and in that sense balance organisms dominated by professional of construction work.
- 4.3. It would be also recommended to integrate the presented project to a global management plan of the World Heritage Property that would take into account a precise delimitation of the site. The previewed construction work has indeed a large impact on the aspect and authenticity of the site.
- 4.4. The patrimonial and archaeological aspects of the project are underestimated. Particular importance has to be given to the aspects of new buildings and their integration to the site. The civil engineering work must consider the impact they have on the sub-soil and preventive archaeology have to be implemented to respond to that problem.
- 4.5. Needs in museography as for display of the remains (news exhibition space, reserves, technical areas, circuits,) have to be part of the programme to respond to the all needs and must not be limited to a catalogue of punctual projects.
- 4.6. The aspects of conservation on the questions of aggressions dues to marine elements are primordial. Possible analyses and restoration proceeds have to be developed within the project. Experience and technicity learned there will be capitalised with the development of local specialists teams.
- 4.7. Needs for funds should not be neglected and necessary personnel for maintenance and development of new construction should be trained in the frame of this project in order to assure a permanent management.