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Firenze, 12 April 2012

To:

Novak Cadjenovic

Project Coordinator, LSIEMP

Ministry of Sustainable Development and Tourism of Montenegro

IV Proleterske 19, 81 000 Podgorica

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Subject: Preparation of the Main Design for the Rehabilitation of the Besac Fortification; final delivery for acceptance with answers to WB comments.

Dear Mr. Cadjenovic,

with the present letter, I am sending to you the final version of the documents related to the above mentioned assignment, composed by the following packets:

- the cover letter (the present one),
- the Technical Report,
- a complete set of drawings (1 - Basic Survey; 2 – Architectural Design; 3 – Plants),
- the Bill of Quantities, and
- the Environmental Management Plan.

Furthermore, in attach to the present cover letter, you will find a checklist with the answers to the comments expressed by the World Bank technical committee.

Confident that such a final version is answering to what requested by the assignment, I take the opportunity to express to you and to your colleagues my best regards,

Michelangelo Fabbrini

The OPC CEO

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Ansers to the WB technical committee comments.

On 9 January 2012 Mr. Novak Cadjenovic, LSIEMP Project Coordinator at the Ministry of Sustainable development and tourism of Montenegro, has sent us two different files concerning comments and remarks made by WB evaluators. They are named as follows:

- "General Comments on Textual Reports", and
- "Comments of Besac Documentation – December 31, 2011"

In order to answer in a right way to the comments and the remarks highlighted, in the following pages we have organized a check list. As some issues appear to be already addressed, we list only the issues that still need to be addressed.

Inconsistencies

	Remark previously not addressed	Answer
1.	… Is there any historical value to these modifications that validates this choice? It appears in direct opposition to the idea of reopening the arrow slits. A similar example can be found in section 4.3 of the General Report that recommends *reuse of traditional equipment (chandeliers, radiators, sinks, etc.)*. The above indicate conceptual inconsistency.	The Client has decided to reopen some openings that actually are occluded, such the arrow slits. In our opinion, such a decision is not in contrast with the mentioned section 4.3 of the General Report, that mentions the integration of the compound with the technical plant.
3.	There is no mention of the **Carrying Capacity** of the site anywhere. This is extremely important as it dictates the entire conservation/valorization project (# of WCs, parking lot size, drinking water, visitor flow management, entrance ticket sales facilities, visitor safety) since exceeding carrying capacity could be detrimental to the architectonic fabric and the site as a whole. Equally importantly there is no indication of the climate of the area. This knowledge is important as it not only affects visitations (peaks), and therefore revenues for a cost benefit analysis, but is also needed to understand the validity of certain interventions (see comments in technical specifications report for Sentry Box A).	In the general report we have inserted the Annex 4 "Carrying Capacity".
	Finally there are no dimensions in the drawings nor the text, which makes the rationale of certain interventions difficult to assess.	We have inserted the graphic scale in any drawing.

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4. Almost all surfaces are to be treated with biocides and water repellent chemicals. The proposed chemicals, the length of their effect and hence the frequency of re-application are nowhere mentioned. This can have a serious financial impact on the maintenance of the fabric and on the **sustainability of the currently proposed investment**. This being said a type of product is indeed mentioned in the BoQ, however there is no information on how this specific product is selected (one would assume that no less than three products have been reviewed) and, as mentioned, above, there is no indication of the frequency of application necessary.	We have now answered. Please refer to Annex 1: - for the herbicide, item 2.6; - for the water repellent, item 2.45.

Detailed comments on individual reports

General Report	
Historical Notes (1)	
For benefit to communities it would be helpful to have the Population of Virpazar and Vrajina	Inserted
Figures 1 and 2 would benefit from a mention of the cardinal orientation.	Inserted
Archaeological Report (3)	
Paragraph 5 mentions that *archaeological researches have been undertaken for a relatively short period*. Please specify amount of time and provide detailed surveys and documentation. Have any works be undertaken on retaining walls? on the foundations? have any historical pavers been identified on the site (cobblestone, slabs, slates, etc.)? A professional illustrated archeological report including topographical survey, cross-sections, grids and specifying dig levels (various strata, cultural depth) should be provided to ensure that the conservation interventions are adequate. Furthermore despite the fact that only *buttons for German military uniforms* have been found to date, it is recommended to have a chance finds plan in case more artifacts surface during conservation works.	As specified in the Technical Report (item 1.3), the Ministry of Culture has carried out the archaeological researches by itself, and what reported is an excerpt. We have started our work on the base of what provided by the Ministry of Culture.

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Paragraph 6: please specify the material and construction method	The present sentence is reported by the archaeological report issued last July 2011 by the Ministry of Culture after archaeological researches conducted by Ms. Snjezana Simovic. For further details please refer to that report, that will be provided directly by the Ministry of Culture.
Paragraph 8: *Data which were previously reported.* Please specify sources archival or other (texts, photographs, etchings, drawings, etc.) and if possible include reproductions in the report.	As above.
Decay Report	
Section 1.4 describing the plaster decay should specify whether it pertains to internal or external surfaces or both.	In the item 2.2.4, "Plaster Decay" (page 40) we mention: "the plaster is applied on the external surfaces of both the fort and the towers; further, it is applied on the external and inner surfaces of the barracks."
Technical Report	
Whereas Sentry Post A will be accessible through the addition of a new external metal staircase, there is no mention of access to the upper part of Sentry Post B (see further comments on Design papers)	The last comment is: *addressed but is there access to lower part, which may be necessary to clean vegetal growth causes by condensation.* Answered, refer to Chapter 2.3.8.2 and drawing "Architectural Phase", list 47/A
Furthermore the proposed interventions on the foundation/ground of Sentry Post A are not sufficiently justified in view of the complete absence of information with regards to the size of the structure, the functional use, the frequency of use and the expected volume of visitors at any given time.	Refer to the Annex 4 – Carrying Capacity
Technical Specifications	
The only notable omission pertains to the method to be used for replacing missing parts of masonry on horizontal apertures.	The last comment is: *horizontal apertures capping still not addressed (see GP 04-09/11 drawing 08, cross section A-A).* Answered, refer to drawing "Architectural Phase", list 10/A.
Health and Safety report	
The description of the responsibilities of the *Project Supervisor for the Design and Construction/Execution stage* (2.1) should not be the sole responsibility of *the appointed Health and Safety Competent Person* as supervision shall require additional qualifications.	Answered. Refer to Annex 2, "Guidelines for Drafting the Health and Safety Plan", item 1.3.1, "Health and safety Officer".

The possibility of utilizing chutes for disposing of debris from a height has not been investigated under section 1.8. It may be worth doing so.	Answered. Refer to Annex 2 "Guidelines for drafting the health and safety Plan", item 1.2.8 "Construction management plan" (page 128), last arrow: "*the location of disposal sites for material from demolition and excavation, and the means and routing of transport to disposal sites (i.e. the possibility to use chutes for disposing of debris from a height).*"

COMMENTS ON THE MAIN DESIGN

GENERAL COMMENTS ON DRAWINGS

All schematic drawing should have graphic scale. Drawings should be presented with a graphic scale on every sheet of drawing (particularly important if drawings not printed and viewed in projection or on computer). General dimensions (height, length) should be indicated notwithstanding in all cases.	Last comment is: *Partially addressed. There is a numeric scale but still no graphic scale.* Now we have inserted the graphic scale.
Specific comments	
Proposed design for the Fort. Whereas capping is proposed for the tops of the walls; there does not seem to be any provisions for vertical or sharp angled parts of collapsed walls as for example where the metal railing is proposed in MNE.AD.21; drawing#8.	Answered, refer to drawing "Architectural Phase" list 10/A
Sentry Post B The proposed steel and glass floor is an aesthetically, conceptually and intellectually good suggestion. However access to this new proposed floor is inexistent. Furthermore it is not clear what provisions have been made for rainwater drainage and snow, if any, removal.	Answered, refer to Chapter 2.3.8.2 and drawing "Architectural Phase", list 47/A
Additionally the insertion of threaded rods might put the original masonry at risk (have any studies pertaining to the state of the masonry and its capacity to withstand such insertions been made?).	Last comment is: "still valid *if authors feel it can withstand the weight of a specific number of visitors it should simply be mentioned that masonry can withhold"* Answered, refer to Chapter 2.3.8.2.
Lastly there are some safety concerns for visitors, as glass can be a very slippery medium, which should be addressed as well.	In the BoQ, voice NP.RE.50 we mention "Anti-slip treatment".

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Refrigerant lines for the souvenir shop are shown to go directly under the access stairs to the shop. Our understanding is that this solution will necessitate the removal and reassembly of the existing stairs, therefore increasing costs and intervening unnecessarily on the original fabric. [MNE.MD.01]	Answered. Refer to table "mechanical phase" list 01.
Perimeter walls the installation of lighting devices along the walls will necessitate some works that may put them at further risk.	In our opinion, the walls will be not affected by such works.
Site landscaping (horizontal elements of the site e.g., pavements, paths, ramps, etc.) has been omitted. The pedestrian circulation plan/diagram is equally missing (paths? their size and materials of paths?). In turn, handicap accessibility – despite inclusion of special stall in WCs - within the historical site does not seem to have been addressed. The WCs do not account for gender differentiation. Access to the site from the parking is not indicated (including size and type of access for handicapped)	Answered. Refer to Annex 3 "Design for the Access to Disabled Persons"
Terrace landscaping there are no indication of foreseen interventions, although the BoQ reflects costs associated with landscaping.	Answered. Refer to the drawing "Architectural Phase" table no. 09, "Fort with Towers – structural specifications".
Safety issues:	
• no single drawing indicating measures taken with regards to fire safety	Answered. Refer to Annex 4 "Carrying Capacity"
Parking there are no provisions in the drawings. Where is the proposed location? What kind of paving is foreseen?	According to the indications given by the Client, no parking area is foreseen, in order to not affect the immediate surroundings of the fortress (by cutting trees, or leveling the ground where it is supposed there is rock); the little means that can reach for the fortress for temporary uses (bringing persons or materials, etc.) will turn back.
Storm Water Management for the entire site has not been addressed.	Answered. Refer to the drawing "Mechanical Phase" table no. 03.

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Check list of the "Comments of Besac Documentation – December 31, 2011"

1) the inadequacy of the BoQs,	Answered. We now provide a unique version of the BoQ. It contains 11 .xls files (the General Summary, 9 files describing the main BoQ Chapters listed in the General Summary; and the General Conditions) and a unique .pdf file merging all the .xls files. They are made using a unique format, and all of them are translated in English. Any single detail remark has been taken into account.
2) the complete absence of indications (with one exception) as to how the roofs will be waterproofed in the architectural drawings and the text of the report (although there are indications of associated costs in the BoQ)	Answered. Refer to the drawings "Architectural Phase": - list 11, for the terrace roof, and - list 16 for the tower roof.
Furthermore, Section 5 (List of Papers) of the report refers to Economic Reports and Environment Management Plan in the list of documents (submitted?) on several occasions (see pp. 85,87 and 88).	List of Papers (section 5) has been updated.

ARCHITECTURAL AND MECHANICAL DRAWINGS

• There are no updated mechanical plans/drawings provided (lighting, electrical, water lines, sewage, etc.).	Now we provide updated mechanical plans/drawings, carried out with the assistance of the local engineering company AXUM, that has allowed us to put them in line with the National regulations.
• Lighting equipment location is not indicated in any of the drawings	For external light, refer to "Electrical Phase – High Voltage", table no. 04. For the terrace, refer to "Electrical Phase – High Voltage", table no. 20. Regarding the lighting both in the Fort and in the barracks, it is inserted within the "totems" that are shown in the drawings "Electrical Phase-High Voltage", tables no. 14, 17, 21.
• No drawings for the parking lot (location, size, etc.)	Refer to previous answers.
• No indication of pedestrian traffic within the site.	
• Fire escape routes and signs not indicated	
• No indication of handicapped access to the site (important in view of notable level changes and strong inclines at the site).	

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• No indication of access to lower part of sentry post B because the computer graphic rendering is from a P.OV. from below. What has been foreseen if vegetation grows down there due to condensation – how will it be cleaned ? How will the lower portion be maintained?	
• With the exception of the barracks, no indications as to how the roofs will be waterproofed	

FAILURE TO ADDRESS OR COMPLETE SOME OF THE TASKS SPECIFIED IN THE TORS.

Section V of the TORs (OBJECTIVE OF THE REHABILITATION) specify the following: *Among other things, the Project should also undertake an economic analysis of the recovery and equipping of the space and needs of the owner and users, as well as establish a management plan (that would consider carrying capacity, maintenance costs, etc.).*	For carrying capacity, refer to Annex 4 "Carrying Capacity". For Maintenance costs, refer to Annex 5 "Maintenance Costs".
As previously mentioned, reviewers feel that an assessment of the carrying capacity and the development of relevant site management plan is crucial for determining the scope of interventions and the successful outcome of this important investment.	Refer to previous answers.
It is needless to point out the importance of a carrying capacity assessment as the authors have indeed undertaken an impressive study for the HVAC (see pp. 74-79). The calculations have been undertaken based on *27 persons at the maximum load hour*. This being said there is no justification for this number. Are the areas concerned expected to receive no more than 27 persons at a given time? How does this affect the WC? By contrast no such estimates have been made for the WCs and it is not clear why page 71 of the report lists bathtubs and washing machines as no further reference is made with regards to water consumption in the specific case of visitors to the site, which in turn is difficult to assess if there is no estimates of the potential number of visitors at given times of the year and the day.	
To give an example of the importance of a site management plan consider what has been foreseen in terms of sound equipment. The sound system	

specifies three locations for the speakers (Museum Polyvalent hall, Wine Boutique) in BoQ #5. However in the absence of a management plan specifying what the visitor's opening hours shall be and how visitors may be evacuated, it may be wise to install speakers in key open areas.	
Section VI of the TORs (INTENDED USE CONTENTS/FACILITIES) specifies that: *The Project for the rehabilitation of the Besac Fortress needs to plan for the following contents/facilities:* 9. Vehicular access road with arranged parking spaces that would not affect the visual effect of the Fortification and existing vegetation; 10. Adequate access road for disabled persons. 11. Production of interpretation material	Items 9 and 10, already answered, refer to previous answers. Item 11, it will on charge of the Ministry of Culture, during the works phase.
Section VIII (Contents of the project) specifies that *The Project should contain, including but not limited to, the following*: Updated cadastral plans in digital and analogue form and topography; - This is not the case. and that GRAPHICAL PART CONTAINS Impact of contact zones (in section A) Analysis and assessment of the existing situation and existing documentation) and TEXTUAL PART OF THE CONTAINS: (below list of bullet points that have not been addressed) Existing situation: ▪ Excerpt from the *Project for Development of the Small Settlement "Virpazar"* in effect with assumptions and guidelines for the subject area; ▪ Impact analysis of contact zones on this area and vice versa; ▪ Assessment of natural and manmade conditions and potentials with the assessment of restrictions for spatial planning; ▪ Existing situation analysis. Planned solution: ▪ Spatial organisation (intended-use of surfaces, settlements' density, floor area ratio and lot coverage ratio, capacities of infrastructure);	The design project has been carried out on the base of the documentation provided by the Client. The cartographic documentation provided is given back in the "Architectural Phase – Basic Survey", tables 00 to 05.

▪ Rationale for proposes solution, overview of realised capacities, balance of surfaces and urban-development indicators; ▪ Estimated maintenance costs	
The sub-section entitled **Traffic**, e.g. *the capacity of parking areas should be adequately presented in proposed solutions and intended- use of surfaces. The pedestrian traffic should be regulated within the zone and connected with interesting directions from contact zones*;	Refer to previous answers.
Section entitled **Grading and boundaries**: *The graphical annex mast contain and defined boundaries of cadastral and zoning lots, as well as starting points of planned traffic routes, as well as other analytical data necessary for the implementation of the Project.*	
Task 6. (Institutional Arrangements for EMP and Strengthening) of section XI ENVIRONMENTAL AND CULTURAL SAFEGUARDS IMPLEMENTATION	Now we provide the EMP

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