# PROPOSED REHABILITATION AND UPGRADE OF MIZINGANI ROAD BETWEEN FORODHANI PARK AND BANYAN TREE SQUARE

# ADENDUM TO THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

July 2010



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### Background

The Stone Town Conservation and Development Authority (STCDA) propose the rehabilitation and upgrade of a portion of Mizingani Road on the seafront of the Stone Town, Zanzibar. The Mizingani Seafront Improvement Project forms part of the Zanzibar Urban Services Project (ZUSP) for implementation under an agreement between the World Bank and the Revolutionary Government of Zanzibar (RGZ). Technical support for the above project is being provided to the STCDA by the Aga Khan Trust for Culture (AKTC). Aurecon was appointed as the independent environmental consultant to undertake an Environmental and Social Assessment (ESIA) and an Environmental and Social Management Plan (ESMP) of the proposed upgrade of Mizingani seawall and road.

Subsequent to site visits in March and April of 2010 the Draft ESIA was finalised in May 2010. The ESIR included the following key components:

- Introduction;
- Methodology;
- Existing environment;
- Legislative policy and context;
- Stakeholder identification and consultation;
- Alternatives;
- Description of potential impacts;
- Plan of Study for impact assessment;
- Stakeholder consultation: assessment phase;
- Design variations;
- Impact assessment; and
- Conclusions and recommendations

The ESIR concluded that the preferred alternative is Alternative 2 which provides for a mass gravity seawall with a promenade as it meets legal, policy, environmental, planning and conservation objectives assuming that the mitigation measures and recommendations provided are appropriately implemented and monitored

With reference to the information available at this stage of the project planning cycle (i.e. pre detailed design), the confidence in the environmental assessment undertaken is regarded as acceptable for decision-making, specifically in terms of the environmental impacts and risks.

### **Stakeholder and Public Participation**

The ESIR documents were disseminated for comment to various local authorities and stakeholders, including:

- The ZUSP;
- The STCDA;
- The Zanzibar Department of Environment;
- The UNESCO World Heritage Centre and;
- The World Bank.



Since the dissemination of the ESIR and the ESMP the following has been undertaken:

- A meeting held in Zanzibar for the presentation of the ESIA and Planning Team Reports on 24 May 2010; and
- Correspondence prepared for UNESCO on the reasons for the selection of the Vertical Wall with 5.8m Promenade and 6m wide road for Mizingani Road Seafront Upgrade; and
- Further public consultation was undertaken with the local fishermen at Mizingani Beach on 27 May 2010; and

Refer to **Annexure A** for minutes of the above meeting and public consultation.

Based on this engagement the following recommendations are added to those contained in the Draft ESIR.

- 1. *Recommendation:* Ablution facilities should be included into the plans for the planning and upgrade of the Banyan Tree Square.
- 2. **Recommendation:** A handrail must be included in the design of the Mercury Restaurant Beach Steps, and facility for securing boats must be considered such as mooring rings built into the wall or bollards on top of the seawall.
- Recommendation: The inclusion/ relocation of existing concrete tank for washing outboard motors must be undertaken to ensure that this service for the equipment is not lost.

This addendum serves to update and finalise the ESIR based on the comments received on the draft report. It was noted that while the ESIR was comprehensive and thorough there were two issues which would benefit from further information namely:

- Cost implications of recommended mitigation measures; and
- Comment on capacity for implementation of the recommended mitigation measures.

The following sections aim to provide the suggested additional information to further assist the decision making authorities to take an informed decision regarding the mitigation measures proposed.

### **Cost implication of proposed mitigation measures**

An estimate of the cost implications of the recommended mitigation measures are discussed below.

#### **Economic displacement**

"Economic displacement" is defined as a ...curtailment of people's livelihood strategies or income-generating activities, or a blocking of access to important livelihood resources. The potential impact of economic displacement was identified and assessed in Section 11.1.2(a) of the ESIR. It was foreseen that construction activities associated with the proposed project could give rise to possible temporary economic displacement. Parties who are most likely to experience this impact include:



- Mercury's Restaurant and Fahmy Kiosk, as access to their premises may be impeded or limited by construction works, while construction-related disturbances (noise, dust, etc.) may deter some of their customers;
- The two most **permanent vendors underneath the Banyan Tree**, who will be affected for the same reasons as those cited above;
- The small business operating out of the private **residence next to the Banyan Tree** Square, also for the same reasons; and
- The **boat operators** (boats used for both fishing expeditions and tourist jaunts), as construction works may prevent them from moving their boats to and from the beach.

Limitations of access or nuisance impacts may result in a loss of wage income or profits. Based on information provided in the ESIR the possible cost implications have been provided below in **Table 1**. The detail in this table determines the existing wages and profits generated from the businesses likely to be affected and has been extracted from the text contained in the ESIR and has been placed into a table for ease of reference. Whilst it is noted that the ESIR found that economic displacement could be avoided by implementing various construction programming and management measures it is possible that economic displacement occurs despite the measures adopted in which case this baseline information would have to be used to determine compensation for any loss.

Mercury's Restaurant					
45 staff members (full and part-time) Estimated monthly income of between TSH 130 000 and TSH 400 000 per employee					
	Fahmy Kiosk				
Profit Estimated monthly profit of between TSH 200 000 (low season) and TSH 300 000 (peak season)					
7 Employees TSH 70 000 per month per employee					
	Vendors under the Banyan Tree				
Sugarcane juice stall Monthly profit of between TSH 450 000 and TSH 750 000 (divided between four owners)					
Spaza Shop	Monthly profit of between TSH 210 000 and TSH 240 000				
Business in at private residence					
Owner and one employee	Owner and one employee Monthly profit of between TSH 300 000 and TSH 600 000				
Boat operators fishermen (Approx 200)					

#### Table 1: Possible economic displacement and cost implications



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Boat operators	Monthly income during peak season is approximately TSH 160 000.
Fishermen	Monthly income is between TSH 100 000 to TSH 150 000

In order to minimise the severity, duration and extent of the economic displacement impact the ESIR recommends that:

- As far as possible, construction works and schedules should be designed so as to minimise the disruption of access to the beach, Mercury's Restaurant and Fahmy Kiosk.
- Vendors under the Banyan tree should be allowed to continue their business during construction.
- Boat operators and fishermen make use of a shed at the Banyan tree to store their boats. Their access across the road to should therefore be restricted as little as possible. Likewise, disruption of their access to the beach should be minimised.

The cost of implementing the mitigation measures *per se* is discussed in the section on mitigation implementation below

#### **Mitigation implementation**

Table 2 provides the estimated costs of implementing the identified construction phase mitigation measures.

Impact	Mitigation measure	Estimated cost	
Job creation during operation	It is recommended that the maintenance and security jobs for the Mizingani Road upgrade be apportioned to locals as far as possible. This would be consistent with the approach adopted at Forodhani Park, where local people are employed to keep the area clean.	None. The management of this is a contractual matter which would need to be monitored no matter who was employed to undertake the task local or otherwise. This provision should be monitored and managed by the STCDA as discussed in the following section on implementation capacity	
Increased markets for local	Informal vendors should be assisted in becoming formally licensed through the ZMC	None Existing licensing system to include and provide guidance to license informal vendors. No additional costs associated as existing government structures would simply alter practices for this to occur.	
entrepreneurs	The ZMC should be encouraged to reconsider its current restrictions on informal trading under the Banyan tree	None. Engagement between project team and ZMC during project related interactions which would need to occur irrespective of this mitigation measure.	

Impact	Mitigation measure	Estimated cost	
	The implementation of street lights will greatly improve the night- time tourism potential of the area, and thus enhance the economic opportunities available for local entrepreneurs.	Streetlights form part of the project design and no additional cost is thus associated with the addition of streetlights. However, the operation of the lights, in association with promenade upkeep costs, is estimated at between USD 40 000 and 50 000 per annum.	
	A campaign to be launched to educate road users and pedestrians about proper use of the road and promenade	This mitigation measure could be implemented using public signboards on the promenade and clear signage on the road. Costs associated with this mitigation measure are limited to the notice boards as signage forms part of project design. The cost of three to four temporary notice boards is estimated at USD1,200.	
Promotion of pedestrian and traffic safety	A pedestrian crossing be established between the Banyan Tree and the beach access to promote safe crossing of the street for people (such as fishermen)	Pedestrian crossings have been included in project design. No further costs are associated with this mitigation measure.	
	Traffic-calming measures be implemented to limit the speed at which the vehicles can travel	Traffic calming measures in the form of speed bumps and a narrow road width have been included as part of project design. No further costs associated with this mitigation measure.	

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Impact	Mitigation measure	Estimated cost
	Implementation of traffic calming measures at either end of the proposed development area as well as at the midpoint by the central steps to the beach	Traffic calming measures at the three locations have been included in the project design. No further costs associated with this mitigation measure.
Traffic circulation and volume	Road design width of 7 metres to reduce the traffic speed	The road width design has been reduced to 6 metres to limit traffic speed. No further costs associated with this mitigation measure.
	Enforce a 40km/hr speed limit	The enforcement of a speed limit is limited to the capacity of the traffic police. Ongoing communication with the police is critical for the implementation of the mitigation measure but it is not anticipated that any further costs are associated with this mitigation measure as normal interaction between STCDA and the traffic police should occur as a matter of course.
Increased civic pride	Information boards be erected to contrast the state of the road before and after upgrading	Unlike the signage for the use of the promenade described above, permanent information boards should be erected as in Forodhani Park documenting the change from the old wall to the new. Costs associated with the erection of such a notice board in an appropriate location and are estimated at USD 2,500. Alternately, as part of the detailed design, it is proposed that a portion (6 metres) of the old wall be reconstructed on the historic line bearing a plaque of interpretive information. A continuous paved line along the historic alignment is also being explored.

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Impact	Mitigation measure	Estimated cost
	A security guard should patrol along Mizingani Road, as is done at Forodhani Park	It is anticipated that the same security guard can patrol both areas and thus no additional cost is anticipated. However, should another guard be appointed the cost associated is estimated at approximately USD 450 per month including insurance and benefits.
	Street furniture, street lights and refuse bins should be erected and maintained to further enhance the quality of the area	These mitigations measures have been included in the project design and no further costs are anticipated.
	Match seawall construction material and final appearance to that use at Forodhani Park	These mitigations measures have been included in the project design and no further costs are anticipated.
Heritage and cultural resources and World Heritage Site Status	Should reclamation be undertaken the position of the current wall should be acknowledged in the design and through the use of interpretive signage.	This detailed design is yet to be determined and will be costed into the infrastructure costs. Preliminary concepts are to mark the position with a different colour paving stone in which case the cost impact would be limited. Any signage regarding the upgrade would include acknowledgement of the wall positioning and the manner in which it has been marked.
Quality of Open Space	Ensure appropriate landscaping and maintenance of landscaped areas	As with Forodhani Park a maintenance cost is associated with the day-to-day management of the landscaped areas. However, due to the limited extent of vegetated areas it is anticipated that Mizingani Road will be managed in conjunction with Forodhani

Impact	Mitigation measure	Estimated cost
		Park at no additional cost.
Addition of palm trees	Care should be taken in the choice of palm tree to ensure that the species is not visually obtrusive. The visual specialist suggested that, as in the illustrations, coconut palms be considered as their idiosyncratic way of growing will prevent the scene from seeming overly manicured	The choice of coconut palms as the preferred planting is considered part of the overall project cost and no additional costs are anticipated.
Addition of street lights and	Choice of light fixtures and furniture should be in keeping with the surrounding buildings and Forodhani Park	These mitigations measures have been included in the project design and no further costs are anticipated.
furniture	Light should be directed down and along the street as opposed to up and out to sea	These mitigations measures have been included in the project design and no further costs are anticipated.
Access to the beach	Specific provision has been made for a boat ramp to allow ease of access to the beach for the boats from the Banyan Tree. Alternative stair design has also been included as a design alternative.	These mitigations measures have been included in the project design and no further costs are anticipated.
Possible permanent economic displacement	In order to mitigate this impact, it is recommended that no additional restrictions be placed on access to and use of the area once the upgrade of the project area is complete. It may be necessary for the project proponent to negotiate this issue with the ZMC.	As discussed above, possible economic displacement has a range of costs attached to it depending on the livelihood affected and the period of time for which there is displacement. Construction programme and management costs associated with retaining access are extremely difficult to quantify until the final design has been

Impact	Mitigation measure	Estimated cost
		undertaken. If required, negotiations with the ZMC should be undertaken by the STCDA and have no specific additional costs associated with them.
	Steel rings should be included in the design of the seawall to which boat owners can tie their boats. Children will also be able to climb up the rings once they have jumped into the water.	These mitigations measures have been included in the project design and no further costs are anticipated.
Alteration of the seawall dimensions (height and width)	No mitigation measures have been identified as the proposed development is already proposed in keeping with the visual aesthetics of the Forodhani Gardens	No further costs are anticipated with regard to this project component.
Splash erosion of buildings	Use of permeable or semi permeable surface on sidewalk adjacent to any buildings; and	To dissipate the rain energy it has been recommended that an interface of coral aggregate paving with greater exposure to give a rougher surface be explored. These mitigations measures will be included in the project design and no further costs are anticipated.
	The angling of the sidewalk so that back-splash is limited and water drains away from and not along or towards the buildings. To assist in the protection of the facades of buildings lining the Mizingani Road, relevant sidewalks to be built at a 2.0 % crossfall towards the road reserve to allow for surface water dispersal.	These mitigations measures have been included in the project design and no further costs are anticipated.
Seawall habitat	No mitigation is considered to be necessary	No further costs associated with this impact.

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Impact	Mitigation measure	Estimated cost	
Intertidal area	The proposed scour protection at the base of the new wall is likely to be composed of coral rag as much for a visual reason as well as creating the required variety in surfaces for the effective re- establishment of the intertidal area.	These mitigations measures have been included in the project design and no further costs are anticipated.	
Impoundment and erosion of sediment	NO DIDONIOD DIEASULES DAVE DEED IDEDUDED INO TUMDAL COSTS 35500		
Ablution Facilities	Inclusion of toilets (and showers) into plans for the upgrade of the Banyan Tree Square.	These mitigation measures will be considered as part of the potential upgrading of the Banyan Tree Square.	
Enhanced community accessibility and safety	Inclusion of a handrail on the Mercury Restaurant Beach Steps, and facility for securing boats such as mooring rings built into the wall or bollards on top of the seawall.	Mooring rings, as discussed above, have been included in the design and no additional cost is associated. A handrail may be considered during detailed design.	
Facilities for boat equipment	Inclusion/ relocation of existing concrete tank for washing outboard motors	It has been proposed that the remodelling of the concrete tank for the washing of outboard motors be included in the future remodelling of the Banyan Tree Square.	

The information in terms of potential economic displacement as well as potential cost of mitigation measures should be seen as estimates as there may be variables which are unknown and have thus not been considered.

## Implementation capacity

Confirmation of capacity of the implementing agencies to undertake the recommendations of the ESMP was questioned. The ESIA and the ESMP did not include an assessment of capacity and any recommendations were made based on technical, stakeholder and community input. This section provides an overview of the key ESMP recommendations and potentially associated capacity constraints.

#### **STCDA**

As recommended in the ESMP, the STCDA shall assume overall responsibility for the administration and implementation of the construction phase ESMP.

Identified responsibilities during the construction phase include:

- Regular inspection of employment records provided to the STCDA; and
- Oversight of appropriate design implementation during the construction phase.

Capacity of the STCDA to undertake these activities during the course of the construction phase may not be available. Should the STCDA advise that there are capacity constraints the following alternatives are recommended:

- 1. The appointment of an additional staff member at the STCDA to monitor and manage the STCDA's requirements in terms of the ESMP during both construction and operation; or
- 2. The delegation of design compliance monitoring to the AKTC during their involvement in project implementation.

It is recommended that AKTC on-site staff provide assistance to the STCDA to monitor design compliance with the agreed-upon measures and help with the preparation of regular progress reports As project managers the AKTC is well placed to communicate progress and compliance to the STCDA on a regular basis thereby assisting with the identified capacity constraint. This will allow the STCDA to fulfil its mandate with the assistance of the AKTC.

Operational phase oversight and management has also been identified as a STCDA responsibility. As identified in Sections 4 of the ESMP the monitoring or splash erosion and beach levels will need to be undertaken on an ongoing basis post-construction. Due to apparent capacity constraints it is recommended that a suitably qualified individual be appointed by the STCDA to undertake regular and pre-determined monitoring of possible splash erosion, beach levels as well as other identified mitigation measures. The following management components have been identified by the ESMP as post-construction activities:

- Monitoring of beach and water access post construction
- Assistance offered to vendors regarding licensing through the ZMC
- Engagement with the ZMC to reconsider restrictions on trading under the Banyan Tree
- Regular maintenance of furniture and lighting fixtures



- Ongoing management and mitigation measures implemented as required for the upkeep of plantings
- Regular patrol the area
- Erection and maintenance of street furniture, street lights and refuse bins

In conjunction with the monitoring of the beach level and the health of the building facades the appointed individual should be required to undertake the above components. Should it be determined that the capacity within the STCDA exists it is likely that as a minimum project related training be undertaken. Training should be provided by the staff currently operating in Forodhani Park. This additional training does not require additional funding, but only the inclusion of training sessions in the schedule of the existing staff within Forodhani Park. If a suitable candidate cannot be sourced then the role will need to be externally advertised.

#### ZUSP

The ESMP recommends that the ZUSP take on specific roles based on their environmental capacity and mandate. Environmental management of the construction phase is central to the effective implementation of the ESMP and the ultimate sustainability of the proposed project. The following components have been identified by the ESMP:

- Monitoring the implementation of the provisions of the ESMP as described below;
- Undertaking weekly inspections of the site to determine whether the ESMP is being effectively implemented and to determine the overall compliance with the ESMP;
- Continual review the appropriateness and efficacy of the management of the ESMP. Any revisions would however need to occur in consultation with the AKTC;
- Via the AKTC, demand corrective actions in case of non-compliance with the ESMP;
- Keeping a register of incidents and other documentation related to the ESMP.
- Preparing a bi-annual ESMP Compliance Report, reporting on the level of compliance and the efficacy of the management of the ESMP, and listing any systematic breaches and concerns and recommending appropriate actions.

Acting as the Environmental Officer on site it is recommended by the ESMP that the ZUSP Environmental Safeguard Office undertake the following:

- Monitoring and verifying that the ESMP is adhered to at all times and taking action if the specifications are not followed;
- Monitoring and verifying that environmental and social impacts are kept to a minimum;
- Reviewing and approving construction method statements with input from the Engineers;
- Assisting the Contractor in finding environmentally responsible solutions to problems;
- Giving a report back on the environmental and social issues at site meetings and other meetings that may be called regarding environmental matters;
- Keeping records of all activities/ incidents on Site in the Site Diary concerning the environment;
- Inspecting the site and surrounding areas regularly with regard to compliance with the ESMP;
- Keeping a register of complaints in the Site Office and recording and dealing with any community comments or issues;



- Monitoring the undertaking by the Contractor of environmental awareness training for all new personnel coming onto site;
- Ensuring that activities on site comply with other relevant environmental legislation;
- Ordering, via the Resident Engineer, the removal of person(s) and/or equipment not complying with the specifications;
- Issuing of fines for contraventions of the ESMP;
- Completing incident reports and monitoring checklists; and
- Keeping a photographic record of progress on Site from an environmental perspective.

Should the ZUZP lack the capacity to undertake the recommended tasks it is recommended that a suitably qualified and capacitated individual be appointed to undertake such a role. The ZUSP is well placed to undertake this work and would act as a relatively independent monitoring entity for the STCDA with whom the ultimate responsibility lies. If a suitable candidate cannot be sourced then the role will need to be externally advertised.

Associated time required to undertake the monitoring and management tasks is estimated include no more than 3 hours of site time and 3 hours of office time per week. The cost associated with the proposed work is thus based on 6 hours of work per week.

# Conclusion

Cost estimates provided above are based on the information available to Aurecon at the time of writing and should be considered to be indicative rather than prescriptive. Based on stakeholder engagement, the potential costs of temporary economic displacement is dependent on access to the beach and the water. Effective management of access may result in little if any economic displacement.

Capacity of the STCDA for the implementation of both the construction and the operational phase of the proposed development remains unknown. However, it is likely that the STCDA does not have sufficient capacity to undertake the roles and responsibilities identified. Additional capacity will need to be sought and appropriate training provided to all those involved.

It was the recommendation of the ESMP that the ZUSP Environmental Safeguard Officer undertake environmental monitoring and management during the construction phase of the proposed development. Should the ZUSP identify capacity constraints it is recommended that additional staff with suitable training be appointed to undertake the task.

# Annexure A:

# Minutes of additional stakeholder consultation

REGISTRATION OF PARTICIPANTS ON PRESENTATION OF CONSULTANCY WORKS HELD AT AGA KHAN CULTURAL CENTER, ZANZIBAR ON 24TH MAY, 2010

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# Meeting with Fishermen at the Fishermen Marquee

Date: 27 May 2010, 10am

Name	Organisation
Hassan Hamad	Mvuvi
Mohd Ahmad	Mvuvi
Ali Abdalla	
Habi Ubu-Abdalla	Baharia
Seif Ali	Nahoza
Mohd Omar	Mvuvi
Ali Zungu	
Khamis Juma	
Sharir Ahme	Mvuvi
Ali Suleiman Ahmed	Mvuvi
Abdalla Mbarale	Baharid
Abassi Abdalla	Mvuvi
Khamis Hamadi	Mvuvi
Abeid Bandar	Mvuvi
Mngwali Juma	Baharia
Nassor Salim Nassor	Baharia
Mohd Juma Said	Baharia
Juma Hassan Juma	Baharia
Abeid Mbarak Mohd	Baharia
Subeit Salum	Baharia
Mohd Suleiman	Baharia
Mzee Khams Aly	Baharia
Juma Hamadi Ali	Baharia
Yussuf Juma	Baharia
Salum Ali	Baharia
Saidi Keissi	Baharia
Ali Khamis Hamad	Baharia
Amir Hamza Amir	Translator
Karen Shippey	Aurecon

#### Fishermen feedback on boat ramp design

- Make sure that stairs are designed so that the tourists don't slip as often growth on steps causes them to be slip.
- There should be rails/handles on both sides of the steps so that should someone slip they can catch themselves.
- We are ready to look after this big present given to us, we must also take responsibility to look after it.
- We have concerns about being chased away by security guards once the upgrade has occurred.

- Security can be provided by "us", the community, this option should be investigated. When there is a need for security, first consideration must be given to locals who are using the area such as fishermen or tour operators, we can supply such services.
- Even without the promenade, there are times the high tide reaches the road so we are concerned that there may be no space for us to work on our boats on the sand. We must still be able to pull boats and repair along the top of the beach.
- We would like to have bollards or something like it to secure boats to.
- We are very appreciative that a dialogue has been opened with community. It's the first time they have really been consulted on changes to this project, and give thanks for the fact that the design is being fed back to us.
- The design drawing shows the boat ramp which means that the boat activities are part of the design and this means we are less likely to be chased away. Thank you for acknowledging our activities in the design.
- There is a block outside Famy's in which fresh water to wash outboard engine must be replaced even if in a slightly different location. (Refer to Annexure A for a photograph) Shade over the place to wash the motors would be nice as it would make it better.
- The boat ramp should be a long gentle slope as this makes it easier to move the boats.
- Suggest public toilet would be much better if it would be located in the square not on the beach.
- Wash area for outboard motors should be ideally (long-term) be part of the ablution block in the square so the beachfront is not dirtied.
- Not just public toilets but also showers as well, please.
- The interface with Famy's must be shown on a plan. (Step edge detail).
- It is critical that during construction we retain access during there must be someone to report it to if this is not done. Someone who can make sure that the access is retained. After the building we must not be chased away because of this upgrade as we are part of what makes this area.
- During the rainy season, stormwater runs onto the beach and forms washout channels. This makes it hard to move boats. How will stormwater be dealt with to stop this from happening?
- There is an existing stormwater drain under Mercury's which has been closed by restaurant, the stormwater situation was better water before it was closed.
- How long will it be before this happens and how long is the construction phase?
- Jobs during the project people from this area must be allocated jobs.
- Fishermen and boat operators formed a group and asked government to recognize us (with a license) but that was 3 years ago and we still haven't been recognized. Sometimes the big yachts anchor in the same area and there are sometimes clashes. If we were registered or licensed we would feel safer in terms of tenure.
- Trucks must be stopped from moving along Mizingani.
- Dustbins are not shown on the model.
- Thank you for meeting with us and we wish the project well.

#### Meeting was closed at 11.15am

#### Annexure A



The outboard motor wash bay outside Famy's Restaurant



Item	Notes of Meetir	g	Action
	MIZINGANI SEAWA Minutes from the Fishermen 27 May 2010 from 10h3 at the Fishermen Marquee in Sto	Meeting held on 0 to 13h30	
1.	ATTENDANCE		
	Present: Hassan Hamad Mohd Ahmad Ali Abdalla Habi Ubu-Abdalla Seif Ali Mohd Omar Ali Zungu Khamis Juma Sharir Ahmed Ali Suleiman Ahmed Abdalla Mbarale Abassi Abdalla Khamis Hamadi Abeid Bandak Mngwali Juma Nassor Salim Nassor Mohd Juma Said Juma Hassan Juma Abeid Mbarak Mohd Subeit Salum Mohd Suleiman Mzee Khams Aly Juma Hamadi Ali Yussuf Juma	Mvuvi Mvuvi Baharila Nahoza Mvuvi Mvuvi Baharid Mvuvi Mvuvi Baharia Baharia Baharia Baharia Baharia Baharia Baharia Baharia Baharia Baharia Baharia Baharia Baharia Baharia	
2.	Salum Ali Saidi Keissi Ali Khamis Hamad FISHERMEN FEEDBACK ON BOAT RAMP • Make sure that stairs are designed so th growth on steps cause them to be slipped.	Baharia Baharia Baharia DESIGN nat the tourists don't slip as often	
	<ul> <li>There should be handles on both sides or slip, s/he should catch herself/himself.</li> <li>We are ready to loof after this big preserves responsibility to keep it.</li> <li>We're concerned about being chased away</li> <li>Security can be provided by "us", the com</li> <li>We must still be able to pull boats and repare</li> <li>Even without the promenade, there are time</li> </ul>	ont given to us, We must also take by security guards. munity. air along the top of the	

Item	Notes of Meeting	Action
2.1	Make sy	
2.2	Introductions of all present	
2.3.	Tinka Shapiro (TS) provided presentation on the proposed development and associated Environmental and Social Impact Assessment process. Presentation included map of project area and potential design mock-up.	
	ISM opened the floor to questions advising participants that the meeting is the place for comments and concerns to be made and not to delay comments until a later date.	
2.4	[Regional Commissioner's Rep] advised that he is concerned about the use of the sea frontage.	
	TS questioned whether this was an issue of access to the beach, and the participants overwhelmingly indicated that it was.	
	Karien Lötter (KL) advised that the project team understands that the seafront is of paramount concern and that the issue, including beach access, is being investigated.	
	TS added that the team has consulted with the University of Dar es Salaam Institute of Marine Sciences, who indicated that reclamation will not result in the removal of the beach, as the beach will re-establish itself.	
2.5	Simai M. Said (SMS) questioned incidents where water is coming out of the middle of the road and concerned that this is as a result of infrastructure damage.	
	TS advised that the water, like the sink holes, could be as a result of erosion under the road and sea water pushing up through the road.	
	Mohamed Bhaloo (MB) advised that this would be an engineering issue and that it is being dealt with accordingly. This was reiterated by ISM.	
2.6	Rashid Ali Juma (RAJ) expressed concern about the impact on current sewage outlets across the beach and questioned how these would be dealt with.	
	MB advised that an engineering assessment was currently underway and that this issue would be dealt with by this study. The Aga Khan has requested maps and drawings of the sewerage system. He further advised that no environmental clearance certificate would be issued until all these issues had been resolved.	
2.7	Arusi M. Ali (AMA) expressed that she is concerned about the impact construction activities will have on the community, and she enquired about how the project will alter the uses of the seafront.	
	KL acknowledged that concern regarding construction activities and further responded that all uses of the beach are being considered and that the team's aim is to make design recommendations that will facilitate these uses after the project is complete.	

Item	Notes of Meeting	Action
2.8	Pursuant to engineering related discussion between MB and other attendees Amir H. Amir (AHA) requested that the meeting remain on track, focusing on environmental issues.	
2.9	RAJ expressed concern about constructions issues such as access and movement. He advised that he was concerned about the overall impact of the proposed development on people and houses along the alignment. In addition, Suleiman T. Mohammed (STM) sought clarification as to who will be responsible for structural damage caused to his house as a result of construction activities for the proposed project.	
	ISM confirmed that there is concern about the impact on a heritage resource, i.e. the houses, and stated that there are regulations in place that dictate responsibility of construction damage caused to privately owned buildings.	
	KL reiterated that extensive engagement is underway for the proposed project, including engagement of other seafront users to assure future use of the seafront. KL further advised that the project team is aware that there are a wide range of seashore users including swimming and anchorage for which some mitigation measures such as rings, have already been suggested. She further stated access to the beach at all times is vital.	
2.10	ISM and MG again reiterated that the stakeholder meeting was the place to raise important issues.	
	Mayor Mahboub Juma Issa (MJI) advised that "this project is our project" and that it did not belong to anyone else. He reiterated that the community was responsible for the project. He further advised that if anyone did not want to speak at the meeting that comments and/or concerns could be submitted in writing. MJI advised that the community has to change and that in order to change there must be talk.	
2.11	Suleiman T. Mohammed (STM) noted that nobody was representing the boat people at the meeting.	
	Mayor MJI advised that though they were not present they are being spoken to.	
	KL confirmed that she had already spoken to some boat owners and aimed to speak to several more.	
	SMS agreed that the boat people are an important group and need to be spoken to. He recommended that they need to be brought together and that a list of names should be collected for future engagement.	
	STM advised that he can provide a list to KL and committed to doing so.	
2.12	STM expressed concern about the height of the wall and how people would get over it and to the beach.	
	TS advised that the wall would not be notably higher but that there would be top blocks like at Forodhani Park. The need to get over/through the wall at points would be considered.	
3	REFRESHMENT BREAK	

Item	Notes of Meeting	Action
4.1	ISM recommended that we move to the focus points on the agenda and discuss some of the highlighted items.	
	Yussuf Hossan (YH) agreed and highlighted that the development is for the children, for the people, and for the grandchildren. He stated that he wanted his grandchildren to see what his generation had done because the way it is now is not nice.	
4.2	Abdul Hamid Ali Al-Busaidy (AHAAB) stated that the steps at the centre of Mizingani Road were not originally there and that they were built by a previous owner of their building. When asked by ISM what he recommended AHAAB stated that he felt the steps should stay.	
4.3	SMS queried whether once the project had been completed would someone be able to extend the wall out even further.	
	ISM stated that an extensive process was being undertaken with the heritage authorities, including UNESCO. TS advised that further work would be unlikely as it is likely to threaten the Stone Towns status as a World Heritage Site.	
4.4	SMS explained that from January to June (Kaskazi) the sand moves down the beach towards the centre steps and that from July, during Kusi, the beach moves back to in front of the restaurant. He stated that he is concerned that due to the wall being moved out by 5 metres the passenger port would be affected thus requiring further work on the port.	
	MB confirmed that a study had already been undertaken for this impact and that the issues had been considered.	
	ISM advised that the study is very important and that his office would assist in obtaining the report from the University.	
	Hamad O. Juma (HOJ) agreed that this issue had been previously raised. RAJ concurred and reiterated concern about a change in the bathymetry of the port.	
4.5	SMS enquired as to when the project would be implemented. He is concerned about the fact that if construction commenced in June / July then it would greatly affect his season. He further queried as to whether the road would be closed and what type of shielding would be used for the construction site. He stated that the iron sheets used at Forodhani Park were unappealing from a visual perspective. Finally SMS expressed concern about the added pressure on the site as a result of the cargo slipway being moved from the other side of Forodhani Park to the new slip adjacent to the passenger terminal.	
	TS advised the team does not anticipate any restriction of access to Mercury's restaurant, and that these issues were important and that construction lessons learned from Forodhani should be incorporated into the new project. She explained that issues such as road management and cladding would be manageable via the construction phase management plan once all the impacts had been identified. Finally, she advised that the cumulative impact of the relocation of the slipway would need to be considered.	
4.6	SMS advised that lighting had been an issue at Forodhani Park during the construction	

Item	Notes of Meeting	Action
	phase. He stated that during the construction phase the alley which joins Mizingani Rd opposite the centre stairs should be well lit as the access is used quite a bit. He further advised that movement during festivals will also need to be considered.	
	ISM confirmed with TS that these are important issues which will need to be raised as part of the assessment and incorporated in the construction phase management plan.	
4.7	STM advised that vibrations from the construction phase would impact on the buildings along the seafront. He elaborated that the vibrations while work was being undertaken in the port were problematic. He wanted to make sure that options are being considered.	
	TS advised that the engineers were aware of the problem and that mitigation measures are being considered. She further stated that alternates to pilings were being considered.	
4.8	SMS suggested that provision be made along the Mizingani alignment for shade structures. He advised that at Forodhani there are trees for shade and that the lack of shade along Mizingani is often considered problematic.	
	TS advised that though the idea can be included in the environmental assessment it is unlikely that such structures would be considered appropriate from a heritage perspective.	
4.9	SMS advised that once construction was completed on a boat under the Banyan Tree then the boat would be pushed across the road using logs and pushed over the edge of the existing road/wall onto the beach.	
	TS advised that this was an important issue which would need to be considered during the design phase.	
4.10	AHA stated that some boats were currently being tied up to the streetlights and there is some concern about what will happen with the new wall. He advised that the boats may be tied around the new top-blocks and that could cause structural problems.	
	ISM advised that the issue will need to be considered and mechanisms put in place to solve this problem. He advised that anchors could be provided but that it must be determined how many are needed otherwise more boats will come as a result of the upgrade.	
4.11	AHAAB questioned who would pay for any damage due to the construction activities.	
	ISM responded that there are regulations that govern these issues and that the regulations will be followed.	
4.12	SMS suggested that a spotlight be focused on the Banyan Tree at night to highlight the beautiful tree. In addition, SMS felt that since the project will change the face of Stone Town, it is important to 'archive' the old area, through for example, boards showing 'before and after' photographs.	
	TS advised that issues around the Banyan Tree would need to be addressed when the rehabilitation of the Banyan Tree Square is considered.	

Item	Notes of Meeting	Action
4.12	ISM explained that he is concerned that the kiosk will not fit in with the new seafront once the project is completed.	
	SMS advised that he would like to meet outside this meeting to discuss the issue further to understand what needs to be done.	
	STM would like to know if there are any plans to renovate his house.	
	ISM stated that he recommends that the house be painted at the owner's expense, but added that this is an issue to be discussed at another time.	
	SMS stated that the project should be supported, that he supports it, and that the tourism association he is a member of will support it. He further congratulated the mayor's office on the work that they have been doing.	
	Mayor MJI thanked the group for attending his meeting and promoted change as a positive attribute.	
	IMS thanked everyone for coming and closes the meeting	
5	Meeting closed at 13h30.	

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### THE AGA KHAN TRUST FOR CULTURE

#### **MEETING NOTES**

DATE:	2010.05.24
Тіме:	09.30-13.00;14.00-15.30
LOCATION:	Zanzibar, Old Dispensary Meeting Room
PRESENT:	See copy of sign in sheet.
PROJECTS:	Mizingani Seafront

RE:

1) Francesco Siravo made introductory remarks to outline the Mizingani Seafront initiative:

**ZUSP Presentation of ESIA and Consultant Reports** 

- Seafront area was identified in the 1994 Conservation Plan which was approved by the government;
- Included into the ZUSP Programme as a sub-component;
- Includes the seawall, infrastructure, promenade and furnishings, and resurfacing;
- Explained AKTC will provide technical assistance throughout;
- The approach is to take the best of the existing situation without changing the essential qualities that make it a unique place;
- The Landscape consultant Antony Wain will describe the design decisions and parameters;
- The Engineering consultant Manfred Kloos will explain the seawall, an essential component in the project for protecting the group of heritage buildings facing the sea;
- The ESIA consultant from Aurecon (Karen Shippey) will explain the independent ESIA study carried out and the implications for the project, based on specific criteria.
- 2) The consultant teams presented their reports and findings. First to present was Anthony Wain (Landscape Consultant). Second to present was Manfred Kloos (coastal engineer), followed by Ms. Karen Shippey (Aurecon) explaining the ESIA report. Consultants presented all their research and materials accompanied by a power point presentation.
- Manfred Kloos explained the necessity to replace the old sea wall which was beyond repair, in order to protect the heritage of Stone Town. This finding was supported and confirmed by Aurecon and their technical consultants;
- 4) Manfred Kloos explained the requirement for the land reclamation: it is impossible to replace the wall in its existing alignment due to the required width of the excavation, which would endanger the line of historic buildings along the seafront and require closure the roadway. By leaving the wall in place, the new wall can be built at a min. of 4-5m out to the sea, leaving sufficient room for the gravity wall footing, as well as maintain one lane of the road open to through traffic during construction;
- 5) Manfred Kloos confirmed that the preferred construction system (engineering design) causes no vibrations, and there is no need for piling;
- 6) During presentation there were many options presented for the design of the seafront, and arguments outlined pros and cons for each option were explained by each of the consultant teams. The main design considerations were:
  - straight wall vs inclined wall;
  - rebuild in existing position vs reclamation of land;
  - road traffic one way vs two way;
- 7) Anthony Wain presented a well documented historical progression showing that the Mizingani seafront has undergone many changes over the past century: mangrove walls, sloped masonry, vertical masonry, railroad, expanded port, electrical lines etc. All changes were governed by serving the practical and functional needs of the Stone Town community and seafront activities. He demonstrated that seafront is not a static space but rather a dynamic one, where changes

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have been implemented at various moments in time to fulfil the needs of the community. The proposed changes should be seen as part of this progression.

- 8) Karen Shippey of Aurecon explained the ESIA analysis of the options and weighed the various impacts, and presented the conclusion that the <u>superior solution was the one with the vertical wall</u>, with five metre of land reclamation, a 5.8 meter promenade, and a six metre road bed (ie two lanes). This would have minimal impact (marine ecology) and add a positive gain of public space, like Forodhani, to furnish an improved public space for the community to continue with all of their current activities and uses of the seafront. The heritage impact was considered positive.
- 9) Karen Shippey explained about the various social impacts and social benefits of the project, as detailed in the ESIA report. A concern raised in the ESIA is the need to ensure the community that the informal uses and informal vendors (un-licensed) will not lose access and livelihoods once the Operations period of the project begins. This would be the responsibility of the local authorities once the construction is complete;
- 10) Throughout the presentations, there were several questions by the attendees regarding the project and research presented, most questions pertaining to the following themes: traffic flow, parking, road width, promenade width and amount of re-claimed land required. The overriding concern was for the potential loss of beach;
- Manfred Kloos reassured the attendees that the beach would remain stable with the new seawall and not be reduced, as it is well contained between two armatures (seawall/sultans landing and seawall/slipway);
- 12) Road width was discussed at length by many participants, however, it was eventually agreed that the project would allow for a minimum <u>6m roadbed</u>, which corresponds to two lanes of traffic. These lanes can be one way traffic (as per the current traffic plan) or two way traffic (if it were ever re-instated). The main consideration was that the project should not create limits to future modifications in traffic planning.
- 13) It was recommended that a comprehensive traffic study should be done for the Stone Town, including traffic flow, direction and parking.
- 14) A copie of the ESIA Report (Draft) and the ESIA Executive Summary Report (Draft) were submitted by Karen Shippey to Issa Makarani, Director General of STCDA during the meeting. The STCDA is responsible for forwarding the document to the MoFEA;
- 15) The review period for the ESIA would be 20 days (review by Ministry of Environment) followed by the 30 days of Public Disclosure by Tanzanian Law;
- 16) Nada Al Hassan of Unesco attended the meeting, to see the ESIA presentation on behalf of Unesco. She explained that she saw the project about three months ago and that the project process so far has been exemplary for a World Heritage Site: the ESIA process has been thorough, there was evidently much research, and the Local Government Authorities were properly informing Unesco (via AKTC) of the project as required by Article 172;
- 17) Nada Al Hassan explained she would bring the ESIA Draft report on the project to be presented in the ICOMOS meeting in Brazil in July, where it will be reviewed by the World Heritage Committee. She would have a verdict, likely positive, by beginning of August 2010.
- 18) Nada Al Hassan expressed some concerns about the total width of reclamation and possible road width (number of lanes) and one way vs two way traffic. As mentioned above, this point was discussed at great length by the Local Government Officials, World Bank and AKTC delegates and the Consultants present, and there was a final consensus that the best solution for the Stone Town was allowing for 5m of land reclamation to allow for minimum functional road width, allow for two lanes of traffic, a sufficient promenade width for the various activities and a minimum width of walkway along the building side to buffer the heritage buildings from traffic vibrations;
- 19) Barjor Mehta stressed the importance that Unesco supports the project, since the World Bank cannot fund a project that would compromise the status of a World Heritage City. The result of



the Unesco meeting in Brazil will become part of the Public Record of the project, and disclosed with the reports;

- 20) Barjor Mehta said that he can give the go-ahead for the engineering design based on the positive results of the reports and presentations. Francesco Siravo responded and said the design detailing would proceed after the Unesco green light in August.
- 21) Issa Makarani asked if AKTC could help contract Aurecon to review the Shipping Port (recently completed). The Port project caused many problems with Unesco as there were never proper ESIA Reports prepared for the project. There was a consensus by attendees however, that it was advisable to keep the issues separate to avoid confusions or risks to the current ZUSP seafront initiative;
- 22) Nada Al Hassan explained that the reports on the Stone Town for the ICOMOS meeting in Brazil were already finished, but that she would present the project from information and images she has gathered during the ZUSP presentations and discussions. The decision of the WHC will be inserted as an article in the minutes of the meeting which will express either agreement or disagreement with the project;
- 23) Barjor Mehta of the WB asked that the attendees reach a final consensus on which alternative was the best solution for Stone Town, based on the presentations and discussions. It was agreed by the attendees in the meeting that the desired option was <u>the vertical wall, with five metre of land reclamation, a 5.8 meter promenade, and a six metre road bed (ie two lanes);</u>
- 24) Barjor Mehta requested that a two page note on a Justification for the project be submitted to Unesco to facilitate the presentation at the ICOMOS meeting in Brazil, and that the Consultants can prepare the summary note and submit the text to the STCDA for this purpose. The STCDA will be responsible for reviewing and sending the text to Nada Al Hassan of Unesco;
- 25) Karen Shippey explained an important positive supporting document for the project in terms of the impact on heritage: according to the ESIA heritage specialist, when reviewing the proposed project in light of the Nara Charter (on Authenticity) the project is acceptable and will not change the nature the Stone Town;
- 26) Who is the responsible authority to undertake mitigation measures outlined in the ESIA report. Some of the mitigation measures will have cost implications, and who will bear those costs;
- 27) Many of the mitigation measures are for during the construction period and will be borne by the Contractor during construction. Some of the costs for the measures for the Operations period will need to be allocated (for monitoring and authorities);
- 28) One issue that came up by the local fishermen during the assessment, was the lack of toilets in this area. It was noted however that there are recently refurbished washrooms in Forodhani, and that this narrow area of the seafront cannot accommodate washrooms. It is something that can be considered for the future in Banyan Tree Square;
- 29) World Bank will prepare an Aide Memoire and will attach the Justification Statement;
- 30) World Bank cannot disclose yet, until the local process is complete;
- 31) Process outlined in the meeting is as follows:
  - World Bank will submit comments directly to Aurecon as an outcome of the meetings and their reviews of the documents.
  - Aurecon will need two full weeks to revise and update the ESIA to make it final (mid June approximately).
  - Aurecon will submit their Final ESIA Report to STCDA (DG Issa Makarani);
  - STCDA will submit the ESIA Report to the MoFEA
  - The MoFEA will submit directly to their PMT;



- The PMT will supervise and ensure that the Ministry of Environment reviews the document in a timely manner, giving their feedback/approval in twenty days (by beginning of August);
- With the positive endorsement of the Ministry of Environment, the document will be made public for a disclosure period of thirty days (according to Tanzanian Law);
- Once the local Tanzanian disclosure period is complete, the World Bank may disclose the project if it was positively endorsed by the Local Authorities;
- WB disclosure is 120 days, equal to four months. This is anticipated to be September, October, November and December;
- The decision of the World Heritage Committee will be noted in the minutes of the Brazil meeting, and available by August;
- World Bank Board meets on approximately January 18, 2011 where the ZUSP projects will all be submitted, discussed and approved.
- 32) The Detail Design Phase will commence once the project is endorsed by ICOMOS and the Local Authorities, approximately end of August/ beginning of September. This roughly coincides with the beginning of the WB Disclosure Period.

DATE PREPARED:	2010.06.01	
PREPARED BY:	RP	
ISSUED TO:	FS, AKTC	

#### Reasons for the selection of the Vertical Wall with 5m wide reclamation and 5.8m Promenade and

#### 6m wide road for Mizingani Road Seafront Upgrade

The authorities' review of the consultants proposals and the Environmental and Social Impact Assessment (ESIA) held 24 May 2010 in Zanzibar, underlined the need for a summary of the rationale for the selection of the Vertical Wall with 5m wide reclamation and 5.8m Promenade and 6m wide road for Mizingani Road Seafront Upgrade. This document provides the essential considerations with respect to the various aspects of the project including heritage, socio-economic, traffic and ecological aspects.

#### Heritage and design considerations

The promenade overall design and width have taken into consideration the risks posed to the heritage as well as urban planning and technical aspects. If the wall position were to remain the same as today, the excavations during construction would be in close proximity to the building façades and therefore the risk of damage to these iconic properties would be highly probable. In order to avoid this risk and not undermine the existing wall during construction, at least 4 to 5m is required beyond the current alignment, which accounts for the proposed reclamation area seaward. The reclamation has been limited to a realistic area which allows for a buffer between construction activities and the buildings.

A further benefit of the reclamation is that, in the additional space provided, it becomes possible to separate pedestrian activities from the road, as well as introduce a larger buffer between the building façades and the existing road, which is a source of vibrations. In relation to the proposed reclamation, the ESIA Heritage specialist notes that the requirements imposed by the World Heritage Convention with respect to authenticity need to be seen in the light of the structural failure of the existing seawall and the threat that this poses to the historic buildings (Atwell, 2010). Further to this, it is noted that the seafront has a history of being spatially and functionally adapted over time and that, as such, it is not a static heritage resource. Its sense of place has been largely determined by the human activities and the role that, as a thoroughfare, maritime wharf and recreation space, it continues to play in the larger context of the Stone Town.

The conclusion drawn by Ms Atwell's report is that the upgrade of the seawall and Mizingani Road, which is in-line with the approved Conservation Plan, is likely to have not only the effect of protecting the heritage resources, but also a catalytic impact on restoration efforts. The project will thus achieve protection for the heritage concerned within acceptable limits of change in a World Heritage Site. It is therefore deemed to enhance the ongoing conservation efforts of the Stone Town.

#### Socio-economic aspects

The socio-economic benefits rely on the design optimizing the pedestrian safety and ensuring continued and enhanced accessibility to the beach. Long term benefits to the existing users and the surrounding community are further strengthened by the fact that proposed design and operation do not curtail user's current activities and access to the area, but rather aim to enhance the quality of the open space, as envisaged for the promenade. The social benefits range from improved civic pride to improved traffic circulation and pedestrian safety, whereas economic benefits include business opportunities for entrepreneurs and job creation. The vertical seawall with a 5m wide reclamation and 5.8m promenade meets legal, policy, environmental, planning and conservation objectives, on the understanding that the mitigation measures and recommendations of the ESIA are appropriately implemented and monitored.

#### Traffic issues

The 6m road allows the Zanzibar authorities to have a two lane street which serves traffic in both directions or a slightly wider street for one way traffic. This flexibility (one or two-way traffic) is inherent in the design and is of paramount importance to the adaptability of the system to future requirements and needs. Even in the case of one-way traffic, it is important that a space be provided for access to emergency vehicles. It should be noted that both human and animal drawn carts are also used along the road and will continue to share the roadway with motorized vehicles hence the road must be able to accommodate this. It is further noted in terms of road width that the interceptor sewer will be placed within the roadway and is planned to be at a depth of below 3m. Should the sewer require replacement or maintenance in the future it would be beneficial to ensure that it is situated at a reasonable distance from both the historic buildings and the seawall.

Given the above, the narrow 6m width is deemed appropriate for an urban setting with heavy pedestrian and nonmotorized transport use, as the gauge acts as a passive traffic calming mechanism without being unnecessarily restrictive. Any further increase of the road gauge, however, is deemed inappropriate as it would limit the width of the building-side sidewalk and would thus jeopardize the adjacent historic façades.

#### Ecological aspects

The marine environment along the site is highly impacted by anthropogenic interventions on and adjacent to the site, including the coastal protection at Forodhani Park and the Port. The habitat loss of 5m of coastal intertidal zone is expected to be largely replaced by the coral rag used at the toe of the new structure and sand migration in the short to medium term. The beach is largely controlled by the Port structures and therefore is not anticipated to experience more than low negative impacts. The ecological impacts were found to be very similar for the various promenade options and are deemed to be of low overall significance. The effect of the width of the promenade was found to be negligible on the marine ecology and the intertidal zone is anticipated to reach a new equilibrium within the short to medium term.

#### Seawater cresting over the seawall

The height of the wall has been designed to match the pre-existing seawall both at Mizingani and Forodhani Park. However, it is recognized that at extreme high tides, during storm surges or in the event of global sea level rise, "overtopping" of the wall will continue to occur and may become more frequent. In the case of such events, the increase in the width of the promenade will form a *de facto* protection for the built heritage, significantly limiting the amount of seawater and spray which will come into contact with the façades.

#### **Conclusion**

The conclusion of the ESIA is that the provision of a promenade and associated reclamation of 4-5m provides more opportunities for benefit than the alternatives which simply replaces the existing seawall for all or part of the road length. The **Vertical Wall with 5m wide reclamation and 5.8m promenade and 6m wide road for Mizingani Road** design was found to be the best heritage, environmental and socio-economic option out the alternatives assessed not only in view of immediate effects on the project area, but also in respect to the wider urban planning considerations. The conclusions drawn from the assessment significance rating in the ESIA (Chapter 12) clearly show that the benefits significantly outweigh the potential disadvantages and should thus be supported.

#### Attached documents and drawings:

- 1. ESIA Executive Summary
- 2. Overall plan
- 3. Typical section