

MISSION REPORT

**Expert mission to Zabid (Yemen),
Historic Town inscribed on UNESCO's World Heritage List in Danger,
organized from 25 January to 14 February 2002**

Terms of Reference

The mission was carried out by Mrs. Cristina IAMANDI, Conservation Architect and Urban Designer:

1. To follow up on the implementation of the measures recommended by the two previous Emergency Assistance missions taking place in May and respectively, in October 2001.
 2. To propose and design with the team of consultants the final synthesis of the Action Plan for Zabid, as well as contributions to a general urban plan for Zabid;
 3. To advise on aspects specifically related to the reconstruction and rehabilitation of the traditional houses, the market and important monuments;
 4. To make proposals, also in drawing, for adaptation, re-use and restoration of traditional architecture
 5. To assist and train the GOPHCY and the other relevant authorities on the proper methodologies in order to finalize the project proposals for architectural conservation and rehabilitation
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ZABID : Assessment of Architectural and Urban Integrity

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The issues addressed in the report are grouped as following:

- follow-up to the implementation of emergency measures established by the two previous UNESCO missions to Zabid (May and October 2001);
- review of fundamental issues relating to the conservation and management of the World Heritage City of Zabid
- advise on specific issues of restoration, reconstruction and rehabilitation of the traditional houses, the market and important monuments
- proposals for the adaptation and re-use of historic residential buildings

The Appendices consist of the mission program, literature and sources used in the preparation of this document, and other relevant material on the progress of the Zabid project.

Implementation of the emergency measures established by the UNESCO MAY AND October 2001 missionS to Zabid

The first objective of the mission to Zabid, was the examination of the implementation of emergency measures established by the two previous UNESCO missions to Zabid, including the recommendations approved by the World Heritage Committee during its twenty-fifth extraordinary session held in Helsinki, Finland (10-16 December 2001).

Discussions with Mr. Abdulwahab Al-Rawhani, Minister of Culture, Mr. Mohammed Jaghman, President of the General Organization for the Preservation of the Historic Cities of Yemen (GOPHCY), Mr. Abdelhakim Al-Sayaghi, Director of Projects Department of the GOPHCY, Mr. Dick Ter Steege, Team leader of the Urban Cultural Heritage Strategy and Management Programme (UCHSMP), Mr. Ali Oshaish, Deputy team leader of the UCHSMP, and members of the team in charge with the preparation of the Master Plan from the Ministry of the Public Works and Urban Planning, were instrumental in assessing the current status of implementation of these measures.

Field work in Zabid and discussions with Mr. Abdallah al-Modwahi, Vice-Governor (Mudir al-Mudiryia) and other local authorities, members of the Administrative Council of Zabid; Mr. Abdallah Al-Salimi, GOAMM-Zabid; Mr. Arafat Al-Hadrami, GOPHCY-Zabid; Mr. Majid Abdallah Warru, President of the local Association for Safeguarding of the Historic City of

Zabid (NGO), as well as inhabitants of Zabid, provided complementary information on this issue.

As a first remark, all the parties involved in the Zabid project working in Sana'a were properly informed about the emergency measures recommended by UNESCO following the mission to Zabid in October 2001. Unfortunately, local authorities, local safeguarding committee and other associations involved in this endeavor were not officially informed, neither about these emergency measures, nor about the emergency action plan and the general progress of the project.

Most of the actions from the Emergency Action Plan for the Safeguarding of the City of Zabid are undertaken. Some projects are in progress or in a preliminary stage (surveys, analyses, feasibility studies, etc.), others are completed and scheduled for implementation. A considerable mobilization of efforts, including the direct and effective involvement of the Yemeni authorities, shows a revived interest in this project. The creation, on 25 June 2001, of the High Supervisory Committee contributed significantly to the organization and co-ordination of the Zabid project. This Committee is formed by representatives of the main institutions and donors and chaired by the Minister of Culture. This initiative was followed by the creation of a local Committee for the Safeguarding of the Historic City of Zabid, formed by representatives of the GOAMM branch in Zabid, GOPHCY branch in Zabid, Ministry of Public Works and Urban Planning, and local Association for the Safeguarding of the Historic City (NGO). This Committee is chaired by the Vice-Governor of Wadi Zabid (Mudir al-Mudiriyia).

- Effective measures were undertaken by the Yemeni authorities in order to *halt new construction* within the World Heritage site (decrees 128 and 129 of June 2001). Violations, however, still occur, and a general discontent has arisen among the local population because no alternative solution was given for consequent unemployment and for accommodating growing families.
- Urgent launching of a campaign for awareness raising and systematic information of the local population;
The mission was informed by Mr.A. Oshaish that a consultancy firm hired by UCHSMP is currently working on an awareness program. The Minister of Culture has offered the support of the Ministry in this action.
- Creation of 1 km wide buffer zone around the historic city and inclusion of the area situated north/north-east of the historic town in the new master plan under preparation;
The team in charge of the preparation of the new Master Plan integrated this recommendation in their preliminary studies for the preparation of the Master Plan, and is considering the area situated north/north-east of the historic town as well.

The definition of the historic town boundaries appears today ambiguous. The city walls are destroyed and private houses and public buildings have been constructed in that location. A firm redefinition of a coherent 'conservation area' is essential to proficient and effective urban conservation. Therefore, the buffer zone, could only be defined thereafter.

- Creation of protection zones of a minimum width of 50 m around the mosques and medersas.
The creation of protection zones around the mosques and medersas needs a legal instrument for implementation. This issue can only be solved with the collaboration of the Public Works and Urban Planning team, GOPHCY conservation experts, and Awqaf. It has to

be further coordinated with other protected areas included in the conservation and the plan planning regulations.

Local Awqaf authority in Zabid, Mr. Ahmed Mohammed Al-Bakhari, looks after banning new construction on the waqf properties, and reports violations to the vice-governor. It resulted from the discussion with Mr. Al-Bakhari that the land around the mosques on which illegal buildings were erected was not rented by Awqaf, as everybody pretends, but abusively appropriated.

- Protect the residential ensembles of the town which are in danger of collapsing.
No concrete action has been taken in regard to this issue. The Quick Scan, which was meant to up-date the urban map of Zabid, contains information that could be used in the implementation of this action. The prerequisites for the implementation of this emergency action are the following :
- Identification of the concerned properties on the map in order to evaluate the extent of damage. This map should indicate the properties that could be recuperated and those that are beyond repair. During the stay in Zabid the mission produced, with the help of UNESCO consultant Dr. Hadi Eckert and two members of survey team, such a preliminary map using information from the Quick Scan. The map has to be completed with the information that was not available at that moment;
- Establishing simple preservation measures (to sustain, stabilize, consolidate and repair threatened historic properties) with a cost estimation for implementation;
- Programming this operation, including time table and institutional arrangements.
The major problem in implementing this measure is the shortage of brick, the principal traditional building material.
- Revitalization of the souk by undertaking effective measures to stimulate the economy
No concrete action has been undertaken concerning this issue. Different strategies were discussed at different levels but no agreement has been reached yet on how to tackle this challenging issue.

The success of the whole Zabid project greatly depends on the economic regeneration of the souk. The burden of this responsibility explains some prudence and reserve towards commitment for this specific project, which, it turned out, also meant “addressing fundamental deficiencies in infrastructure, dealing with merchants who largely lack entrepreneurial spirit, and plunging into a legal tangle of awqaf (religious endowments), which most of the stalls in the souk are subject to”.¹

A multi-disciplinary team should take the lead and decide on the most appropriate strategy. Review of successful souk revitalization and downtown revitalization projects could be very useful.

- Brick production
No progress is noted in this matter since the last mission : for the time being no brick kiln is operational and able to produce bricks of a decent quality. Mentioned as a priority action in all reports already for years, and claimed by the local population as being a vital necessity, the

¹ Johnny B'naity, “So, what does World Heritage status mean?”, *Cairo Times*, Vol. 3, Iss. 7, 27 May to 9 June 1999.

production of bricks is one of the responsible factors in the degradation of the historic townscape by the extensive use of concrete blocks for new construction, reconstruction and repair of old structures. A few attempts have been made in recent years to produce bricks, but they've failed to match the quality of the past product.

The field visit to three brick kilns and on site discussions revealed the following situation:

The two traditional brick kilns, located at Tuhayta (south-west of the city) and at Jarrahi (south-east of the city), are not in use anymore because they are too far from the city (8-10 km) and the brick they produce is of mediocre quality. Too soft and powdery, it cannot compete with the cement blocks in terms of quality and cost.

The traditional kiln design derives from a specific production cycle and the use of a particular recipe including recycled indigo water. Since initial parameters changed, an improvement of the traditional design and production methods was needed. Such an 'modern' brick kiln was designed by GOPHCY and built with the financial support of UNESCO. After years, however, it is still not operational.

The arbitrary choice of its location did not follow the recommendation for building a kiln in the city of Zabid, to be at hand for current and future construction and conservation works. The project fails to respond to the basic requirements of such a project, that is the organization of areas for drying the mud bricks, the storage of baked bricks, as well as the access road linking the kiln to the city. Moreover, there is no specification of the type of fuel used to bake the bricks. Only during the visit this issue was raised (gas or wood?).

The local authorities believe that it is absolutely necessary to test the kiln before engaging in road and storage construction. The Committee for the Safeguarding of the Historic Town of Zabid is ready to commit itself for this action, the cost of the entire operation being estimated at UDD 1,000 (evaluation by A. Al-Salimi, GOAMM-Zabid). The test will indicate also the amount of fuel used per quantity of bricks, the quality of the brick, etc. and will allow for eventual review of the initial design. No immediate success of this kiln is expected, but only after the construction of a number of other kilns that will stimulate competition. Likewise, the concrete block factories multiply (10 years ago, only one; twenty today). The Committee also expressed concern about the choice of wood to burn given the size of the kiln, the availability of this resource, the risks of deforestation and its supply.

A weak supervision by UNESCO of this GOPHCY project during preparation has to be noted.

More reluctant to building an improved, modern kiln, UCHSMP favors the construction, in cooperation with the private sector, of two traditional brick kilns. Based on analyses and tests of historic Zabidi brick, UCHSMP aims to produce a brick with different parameters but similar characteristics as the old one. Work will start in the next two months. The project includes the training of four teams of workers in the production of traditional bricks.

- *Waste management and disposal.* With respect to this action, ten actions are underway. The local administration Council gave its support to implement these measures. Two NGO woman organizations have been set up and produce brooms. A first exemplary action of city cleaning was organized. Despite the assertiveness of the local people responsible for this action, the implementation was not a real success due to the poor involvement of the local population, indifferent and desensitized to garbage, poor organi-

zation and little cooperation of wealthy inhabitants (merchants, for instance, refused to contribute financially).

- *Sewerage.* The technical documentation for the sewerage project, coordinated by GTZ and financed by KFW, is close to completion and its implementation is scheduled for September 2002. The completion of the technical documentation was delayed because the area of the souk was not taken up in the project. During the meetings in Zabid with the local Water and Sewerage authority and GTZ consultant, A. Sayaghi (GOPHCY), and A. Ghipsy (GOPHCY-Zabid), this omission was pointed out and the GTZ consultant agreed for an extension of his study.
- *Pavement.* The technical documentation for the paving project is completed, as reported by Mr. Saeed Abdo Ahmed, Project Director, Public Works Project (PWP). However, it must be noted that, in this stage, paving cannot be considered a priority, it is not an emergency measure. During meetings in Sana'a, several aspects were further discussed:
 - the pertinence of paving an entire town that was never paved; partial paving and improvement of remaining earthen roads might be considered;
 - preparing a paving project prior to the completion of the Conservation Plan. Paving has to be consistent with the planning regulations (indicating the protected areas, properties to be demolished, construction areas, as well as the configuration of public streets and places). A paving project should be coherent with a circulation scheme (pedestrian areas, mixed (pedestrian and vehicles), 2-wheel vehicles and automobile circulation, parking areas, etc.);
 - the level of the streets should be carefully established according to the average threshold level of the protected historic building, and not according to the threshold level of recent buildings;
 - the choice of paving material is a very responsible decision since the use of an inappropriate paving material could result in loss of the town's historic character.
- The preparation of studies and technical documentation - plans and projects - for the restoration of the South gate of the city, *Bab Al-Qurtub* is completed and funds are available. The implementation of the project will start with no delay.
- Under the coordination of UCHSMP, the Quick Scan was completed. The Quick Scan was meant to up-date the current map (aerial photo 1998) and to provide valuable information for analyses and a conservation plan. The team, under supervision of Dr. Hadi Eckert (GOPHCY) and consisting of young professionals - architects, archaeologists, and people with previous survey experience (in Old Sana'a) - did a very good job. The future site managers of the historic town should be recruited among those young professionals that showed knowledge and understanding of historic fabric and its cultural significance, true interest, and a lot of enthusiasm (some of them were volunteering).
- UCHSMP is preparing a *Conservation Plan* for Zabid; at this stage, the objectives, the methodology and the specific tasks are under consideration.
- UCHSMP is preparing the *Guidelines for the conservation of historic cities of Yemen*, a useful tool for guiding conservation work (conservation in its broader sense, including different types of treatments from restoration to regular maintenance), and new design.

- UCHSMP is considering the *restoration and re-use of the Courthouse* for a hotel. A partnership with Mr. Marco Livadiotti, Manager of *Universal*, a major tourism enterprise, is envisaged (joint venture).
- UCHSMP is preparing a *brochure* including a touristic tour of the historic city.
- UCHSMP is currently working for the establishment of a special fund for conservation.

Restoration, reconstruction and rehabilitation of the traditional houses, the market and important monuments

An introductory part to this section attempts to explain the rapid transformation process of Zabidi built environment. A first part that recalls the main characteristics of Zabidi architecture and urbanism is followed by a brief analysis of the effects of change and causes of decay. A better understanding of the rapid process of change and how these changes affect the built heritage is necessary in orienting the future conservation and development of the historic town.

This section further includes a summary of findings and recommendations concerning first, general issues of conservation and rehabilitation of built heritage, and secondly, more specific issues dealing with the main themes: conservation of monuments, traditional houses and city's old market (souk), the adaptation and re-use of traditional houses, and new construction within the historic site.

I. Changing built environment in Zabid

The historic town of Zabid presents an unique form of architectural expression that had developed with a characteristic type of mudbrick building that was suited to the environment, and indeed organically linked to it, and which was also aesthetically striking.

1) Building construction, the system of building, the materials and the technology employed

The characteristics of the traditional construction in Zabid are the use of local materials and the employment of indigenous methods and techniques. Their roofs are flat, made of timber beams (traditionally, trunks are used as beams), branches, and a layer of 40-50 cm of earth. One major handicap of applying the traditional construction methods to non-residential structures is the roof, which cannot have a span wider than 3,00-3,50m because the local timber, a kind of acacia, comes in irregular shapes and in pieces not longer than 3,50m.

The walls and the ceilings are plastered with lime plaster, the floors are in beaten earth, never paved, doors and windows are made of imported hardwood. Hardware is made locally.

The Zabid architecture is adjusted to the climatic characteristic of the region. Because of the hot and humid climate the traditional buildings have high ceilings and large openings for cross ventilation. The courtyard provides shade at different moments of the day and allows to sleep outside during the hot summer nights. The fact that the housing units are detached from one

another provides with additional shade and ventilation of the housing area. Wooden window shutters and upper holes in the facades equally contribute to ventilate and lower the temperature.

The main characteristic of the ‘modern construction’ built recently is the reinforced concrete frame. The walls are made of cement blocks and are usually plastered inside and outside with cement plaster. Doors are made of steel or softwood and are oil painted. Hardware as well as material and fixtures for electrical installations are all imported. They are usually unsuitable to the hot and extremely humid climate of Zabid. Their design ignores the environmental conditions and offers very little thermal comfort because of inadequate ventilation. Moreover, concrete and cement plaster disintegrate very quickly under the humidity and salinity of the air.

Unfortunately, the craftsmanship that marked traditional Zabidi brick construction, is rapidly disappearing. The decorated brick facades have become too time-consuming and too costly to build. The ‘modern’ style is gaining ground primarily under the advantages of new technology (speed and cost of construction), not as much as personal taste. Noura, the local plaster, costs three times as much as cement, and baked mud bricks are in short supply. The combination of expensive materials and labor, and intensive construction has spelled disaster for the traditional industry. However, individuals who can afford a brick construction still prefer it to the cement block. They consider that traditional buildings are more suitable for the hot climate as well as aesthetically preferable.

2) Agglomeration, how individual buildings relate to each other and the resulting collective effect

Zabid displays a closely-knit organic pattern of agglomeration, a result of family patterns, both nuclear and extended, interacting with land ownership patterns. These unique formations yield a rich texture that articulate the space in a series of compositions that emphasize the main public space (Citadel square), the location of both trade (souk), and prayer (mosques, landmarks in the urban tissue: striking white color on all facades, noura plastered, decoration on street facades, minaret) and private enclosed courtyards on which the housing units open one side only.

3) Style, key design features (horizontality) and key architectonic elements that help define architectural character

Unlike the architecture of Sana’a and Shibam, noted for its verticality and its tall narrow structures that reach unusual heights, Zabid created a distinct architectural style that relates more to the lower courtyard houses of the Mediterranean basin.

4) Decoration, key decorative features that reflect the individual and communal aesthetic sense.

Zabid architecture is notable for its heavy use of decoration. This resulted in elaborate facades with complex geometric and floral designs. The *khalwa* decoration is totally different from other units decoration: white colored plaster is used to accentuate the windows and provide a basic part of the facade decoration. Changing patterns of decoration reflect both economic pressures and constraints of skill. The rising costs of decorative work, and the scarcity of skilled labor, have tended to make modern facades much less elaborate, and less sophisticated.

Gradual changes have been introduced into the pattern and type of building as the country broke out of its isolation. The changes observed - changes in economics, affecting the production system, commercial activities, (crafts, industry, etc.), social changes (shift from consumption of domestically produced to imported goods) and cultural changes (in taste, fashion, customs, etc.) - are partly the result of social changes that have affected Yemen first, as a result of the civic war in the 1960s, and second, as a result of the international migration of the 1970s and the return of migrants after the Gulf War. During the 1970s, a large part of the population sought employment in Saudi Arabia. The migrants have significantly affected the traditional construction techniques as well as traditional social demands made upon local architectural expression and design standards.

The impact of technology affected building systems, materials, and decorative elements. As for building system, the notable features are the appearance of reinforced concrete and steel as a result of increasing demand for wider spans for such buildings as schools and small factories as well as shortage of the traditional wooden beams. Building materials have been affected also. The traditional baked bricks are now being widely replaced by cement blocks and local lime plaster by cement plaster. This is mostly a result of the scarcity and consequent high costs of skilled workers and the presence of economically competitive modern alternatives.

II. Conservation of the built heritage

Finding:

There is no consistent definition of the approach and clear understanding of the methodology for the conservation of a historic town.

Integrated Conservation Approach

The modern concept of active integrated conservation means giving an active role to cultural property in modern living. It is based on:

- integrated approach to historical environment
- multi-disciplinary team of institutions and individuals in the rehabilitation process
- integration of conservation and rehabilitation in the process of urban planning and design, that is considering rehabilitation at all levels of planning, including *general master plan* (long-term plans on national, regional and town level) and *conservation and management plan* for the specific area of the historic town (detailed plans for mid- and short-term periods)
- use of appropriate methods in accordance with the character and quality of the heritage, case by case.

Conservation Methodology

The methodological procedure should be multi-disciplinary, multi-level, scientifically founded and respecting the relevant international Conventions.

The preparatory phase of conservation includes the following prerequisites:

- register and inventory of the built heritage
- institutional, organizational and financial conditions;
- program formulation and approval
- provisions of relevant legal requirements and decisions

The stages of procedures in the conservation process are:

- **Architectural survey**, including archiving of survey documents
- **Analysis of the present state**, including inventory of historical heritage of the historic area, architectural, urban, archaeological and historical analyses, technical analyses, social and demographic analyses, economic and financial analyses, land use and circulation.
- **Knowledge of historical phases**, including direct study of individual buildings; study of historical sources; historic phases and spatial evolution and their graphic representation.
- **Evaluation** based on the identification of cultural and social-economic values of historic buildings
- **Plans**, including the definition of areas, planning objectives and principles relevant to historical properties.
- **Planning regulations**, the legal framework for controlling demolition and construction, and for management of existing buildings. Together with conservation plan and guidelines, the regulations are a prerequisite for the planning and execution of projects.
- **Projects**, including the methods to be applied in the rehabilitation process, the basic principles for the approach to projects.
- **Implementation of conservation projects**, including the organization of work sites, construction technology, renovation of traditional crafts, training of specialized workers in conservation.
- **Management**, including the preparation of a management plan providing systematic monitoring, regular reporting, regular inspection and re-evaluation.
- **Maintenance**, including the preparation of a strategic maintenance plan.

Recommendation:

Adopt an integrated approach to urban conservation and apply an appropriate methodology, specifically adapted to the historic town of Zabid, and in line with the relevant international conventions, charters, and recommendations.

Finding:

There is no proper evaluation of historical properties within the area of the historic town of Zabid relevant to the preparation of the conservation and management plans.

A first attempt to this issue was made by Paul Bonnenfant and Jeanne Marie Gentilleau. A list of mosques and medersas and of traditional houses of outstanding value, was established.

These properties were located on a map, and allowed for a definition of four protected areas.² The list of monuments and other assets established by P. Bonnenfant et J.M. Gentilleau can be used as a provisional list but it needs to be validated and developed further by local parties to ensure its accuracy. It may also be used to generate a list of attractions as part of a regional tourism development strategy.

The Quick Scan was a further technical step in the recording and evaluation process. Each survey form contained information on one area corresponding roughly to a clan (multi-family) property, delimited by streets:

- verification of the property limits and alignment
- number of floors
- building material for each built component of the property
- state of conservation
- visual value of the building in the townscape
- function (residential, religious, administrative, commercial, services)
- ownership (private, waqf, State)

The survey also indicates the degree of violations (on a scale from 0 to 5, 0 for traditional materials and features; and 5 for maximum harm) and the interest (architectural, urban).

This information will be computerized and used to make analyses and preliminary maps showing, for instance, the extent and degree of violations; the ownership; state of conservation (will indicate the priorities), etc.

However, its use for establishing the categories of protection and thus the conservation plan, is limited (A: special legal protection of historic monuments, and zones of a minimum width of 50 m around the mosques and medersas; B: protection of historic buildings, including buildings with no architectural interest but sympathetic with the historic built environment and contributing to its integrity; C: the category of non-protected properties that could be modified, altered, demolished and reconstructed; and finally, D: properties that could be demolished in occasion of different projects). The Quick Scan failed to prescribe, on site, the category of protection and the type of intervention recommended. Such a kind of survey, to be fully efficient, should be filled up with prescriptive data, not only descriptive. No photos have been made either, so it is practically impossible to decide, far from Zabid, on what is to be protected on the basis of the Quick Scan.

Recommendation:

Conservation and management planning depends on careful evaluation of the historic town components. A survey providing descriptive and prescriptive information relevant to the preparation of the conservation plan has to be conducted. The Quick Scan has to be complemented with prescriptive data and photographs (interior and exterior).

Finding:

² See P. Bonnenfant (editor), *Zabid, patrimoine mondial, Saba*, nos. 5 et 6, pp. 68, 69. This study helped to guiding further studies and projects and is extensively used as a working tool.

At present time, there are no plans to act as a framework for sound conservation and management decision-making and action for the historic town of Zabid.

Effective conservation and management of the World Heritage site and its individual constituents can only rely upon plans, norms, and guidelines. The preparation of a formal Conservation Plan constitutes a logical and highly desirable step at this juncture. The Conservation Plan, that associates urban planning, housing, and conservation issues, would become the working document that would identify a series of sub-projects. Decisions and interventions will be structured by priority and undertaken in a logical and scheduled sequence that can be more efficiently linked to funding strategies.

The objectives of a conservation plan are to:

- understand the place, by drawing together documents and physical evidence;
- assess significance, making value judgments about the historical, cultural, archaeological social, economical and other types of significance;
- define issues which affect the significance of the place including physical condition, uses, ownership, community expectations, etc.;
- develop conservation policies that will ensure that the significance of the historic town will be retained in any future management, use or alteration. These policies should be in accordance with relevant legislation, government guidance and plan policies, and international guidance and directives.

The **conservation plan** is used to develop policies and thereafter to set guidelines for local management to ensure that the significance of the historic town is respected in any future decision-making and in the physical use or alteration of the buildings and the public places.

The **planning regulations** will form a legal framework meant to regulate contemporary architectural works, they will define the “rules of intervention”. They include : protective zones with general and specific implications, conservation areas with plans for the use of public land and norms for the protection of sites and for conservation/rehabilitation of historic fabric. These norms concern particularly the control of demolition and reconstruction, and the management of existing buildings. Production of new design **guidelines** (horizontal character of architecture, houses grouped around courtyards, use of traditional materials or materials that are esthetically compatible, etc.) based on settlement morphological characteristics can be used for the regulation of new construction and design. Particularly in the areas where streets, plots and buildings form a substantial component of the character and which is deemed important to retain. A **manual** of typological elements, architectural forms and details as well as spatial organization may be a necessary tool in the working process. It will enable the description of the character of buildings and spaces and give full attention to the character of each property.

Recommendation:

Preparation and approval of a Conservation Plan for the Historic Town of Zabid. This plan that integrates the historical, architectural and technical knowledge in the form of technical specifications and guidelines for the use by public and private entrepreneurs in planning and executing projects in the area of the historic town of Zabid. Technical standards and recommendations provide the tools for the control of transformations in the existing fabric.

Finding :

The main problems found during field surveys are basically structural problems, poor workmanship, improper repairs, moisture and termite infestation.

The following on-site observations are common to the majority of historic buildings, including religious buildings (mosques and medersas), military buildings (city gates and *nubat*), civic public buildings (administrative buildings) residential buildings, working and commercial buildings. They consist of:

- *Overloading.* Stress cracks observed in brick walls appear as diagonal lines, which usually start at a door or window frame, but they also appear anywhere in the wall. The weight of the roof, the later remodeling (the most common is the later addition of a *khalwa*, in top of a murraba or liwan) without reinforcing enough the existing structure³, or a doorway or window cut without adding a structural beam across the top of the opening, imposes a heavy burden on beams and joints. Overloading and structural movement caused, first, ceiling lime plaster to detach and fall, and in the worst cases, roofs to collapse.
- *Differential settlement.* Cracks observed in walls result also from differential settlement of the building. The unstable foundations causes diagonal cracks running in opposite directions. Differential settlement of the buildings and water infiltration in the walls and their footings are mainly due to poor drainage of the streets and to the large amount of water discharged in the ground by installing a water supply system prior to providing a sewerage system.
- *Poor workmanship.* In addition, damages are also a result of the use of poor materials or workmanship. For brick and “noura”, the local lime waterproof finishing plaster, for instance, the proper proportioning and mixing of materials are vital to the quality of the brick- and plasterwork (see previous discussion related to brick kilns). As for brick, the knowledge of the process of making lime plaster is important.⁴

Lime plaster allows to be applied directly to masonry walls, forming a suction bond. They can survive moisture or water winking up from the ground. That is why all elements that are susceptible to moisture retention are waterproofed with lime plaster (flat roofs of all buildings; enclosing wall edges; also, the plain street facades of houses are plastered for approximately one meter above the street level and present vertical noura stripes 60-80 cm width which allow rainwater be carried away from terrace roofs through gutters).

- *Moisture.* Moisture problems occur for several reasons:
- roof leaking; failing to waterproof the roof causes wall and ceiling damage as well as mud seeping on the interior walls deteriorating noura decoration;

³ For most additions of an upper floor, the existing structure has been buttressed at the base (buttress is called locally *fakhl*).

⁴ The limestone is burnt for a minimum of 24 hours and then cooled. Lime taken from the kiln ("quick lime") is mixed with water to “hydrate” or to slake the lime. As the lime absorbed the water, heat was given off. When the heat diminished, and the lime and the water were thoroughly mixed (paddling the putty could take 8 hours!), the lime putty was used to make plaster.

The lime-plaster has such a long setting time, that it can be reworked for such a long time and pounded into the desired matrix. The crystallization process in setting lime is very slow, unlike gypsum which sets very fast. But lime is waterproof, unlike gypsum which is water soluble.

- inappropriate use of enamel paint over the brick masonry that prevents moisture from evaporating;
- wall dampness caused by leaking roofs and capillarity action (poor drainage of the streets that spilled run-off water to their base and damp the footings). Plaster applied to a brick masonry wall is vulnerable to water damage when the wall is constantly wet. When salts from the masonry come in contact with water, they migrate to the surface of the plaster appearing as dry bubbles or efflorescence. The source of the moisture must be eliminated before replastering the damaged area.
- *Repairing.* If major structural problems are found to be the source of damage, the structural problem should be corrected. It is necessary to remove deteriorated plaster caused by rising damp in order for masonry walls to dry out. Repairs made to a wet base will fail again.

Conservation work should include the rectification of past inadequate repairs that has resulted in the loss of historic evidence and cultural significance of the historic building (carved Quranic inscriptions were covered with cement plaster and loss of 15th century Persian glazed tile panel during repair of the Grand mosque). Irresponsible work due to ignorance of conservation principles and lack of knowledge and understanding of cultural significance of the building could be avoided in the future by training the workers in traditional techniques and basic principles of conservation.

- *Termite infestation.* Rotten traditional hardwood beams or other structural members can be seen almost everywhere in Zabid. They are due to a generalized termite (more precisely, *subterranean termite*) infestation. Standing water and excess moisture create the perfect environment for these insects. They are difficult to control because their nests are deep underground and their colonies can contain up to one million members. When they find a reliable food source, they'll return to it again and again. The most obvious sign of subterranean termite presence, that can be immediately noted on the walls and ceilings, is mud tunneling.

Treatments for eliminating and/or preventing termite infestation usually involves:

- Eliminating excess moisture.
- Eliminating termite entry points.
- Killing the termites that already infest the building.

Recommendation:

A program of condition survey should be prepared for all the historic buildings. The condition survey should assess also the priority and cost of maintenance and conservation work, including rectification of past inadequate repairs. No conservation work will be undertaken until the source of damage is eliminated.

Finding:

Until appropriate conservation treatments are established and prepared, emergency interventions, such as installing temporary propping (struts, buttresses, framing, etc.) are absolutely necessary.

Collapsing roofs, windows and doors, and brick walls with major, dangerous cracks have to be propped with simple, appropriate strutting systems of poles and planks to resist structural stress.

The Quick Scan could be used, in this phase, to identify the structures concerned by this emergency measure.

Recommendation:

Proceed with the immediate installation of temporary strutting structures to stop progressive structural damage of buildings. These structures need to be simple, inexpensive, and based on a sound analysis of the causes of damage. Use the Quick Scan to identify the buildings that are concerned with this emergency measure.

Finding:

Given the shortage of specialized crafts workers, training construction personnel in traditional crafts is necessary.

On-site workshops involving experts and the few remaining skilled crafters can be organized prior or during works. In order to avoid past inadequate repairs, due to lack of knowledge and understanding of cultural significance of the historic fabric, training should also include the basic principles of conservation, stressing the difference between building and conservation work.

Recommendation:

Construction personnel should receive adequate training in undertaking historic preservation work. A series of training workshops has to be provided with the collaboration of experts and skilled craftsbuilders.

Finding:

Neglect and lack of maintenance are among the main causes of decay. They relate to poor management and awareness both of the staff and the public.

Therefore, first of all, it is necessary to raise the awareness of users and to make them conscious of heritage values. This requires some guidelines for use and maintenance of the historic building.

Recommendation:

A strategic maintenance plan should be established as part of a quality management. Raising awareness both of the staff and the public on the advantages of a continuous maintenance should be included in such a strategy.

...

The previous recommendations apply for all categories of historic buildings of the city of Zabid. In the following sections, specific recommendations concern monuments, traditional buildings and old market (souk).

III. Restoration⁵ of historic monuments

Finding:

Serious shortcomings were found in the condition of various monuments such as Al-Ashair Mosque, Grand Mosque and the Citadel Mosque. Advanced degradation will occur rapidly unless sound restoration is undertaken urgently.

Out of the four gates, only the south gate, Bab al-Qurtub, is not restored yet, but its implementation will start soon.

The Citadel project carried out by the Canadian Archaeological Mission is under completion. However, the two main public buildings integrated in the Citadel - the offices and residence of the Mudir al-Mudiryia and the Courthouse - still need special conservative treatments, despite the fact that they are of more recent nature. They contribute, by their imposing shape and size, to the urban quality of the Citadel square and act as landmarks in the townscape of Zabid. Moreover, they constitute a good example of civic public buildings using traditional materials and techniques.

Recommendation:

The three oldest mosques in Zabid, Al-Ashair mosque, Grand mosque and the Citadel mosque need urgent restoration. This priority action need to be followed, in a next phase, by the restoration of the other significant mosques and public buildings.

Functional re-use

Finding:

The restored military buildings are only partly re-used.

The GOPHCY Zabid office is located in one of these fortified structures, the *nubat* al-Kadf (now called *nubat* al-Hadrami). Unfortunately, this office is not operational. It is closed and deprived of water and electricity, while many other governmental or NGO's do not have an office.

Recently, a Zabidi Women NGO has settled its activity in one section of the East Gate. This salutary initiative has to be encouraged since it engages the local population in a meaningful way that allows them to take control, at a local level, of their economic destiny.

The courthouse is improperly used. Lack of maintenance and poor management results in a rapid deterioration. Its adaptation to a new function, preceded by a thorough restoration, has to respect the initial spatial organization and changes should be limited since a major intervention

⁵ The restoration principles that apply to Zabid are included in appendix no. 2.

could result in loss of historic character and even integrity. Social appropriateness of the re-conversion of the courthouse in a hotel - currently under consideration - as well as social compatibility of the new function with the adjacent building (administrative offices and residence of vice-governor) have to be examined before engaging in this project.

The functions to be hosted in historic public buildings might include a community center where local residents meet for social and cultural activities, a public library incorporating a conference room and an exhibition hall, a tea house including qat room, a museum of traditional way of life of Tihama, a museum of indigo, or tourism related functions, such as hotels, inns, touristic information center.

Recommendation:

The utilization of historic monuments is recommended since inoccupation leads to lack of maintenance and decay. If the original function is redundant, a new function might be envisaged for monuments other than mosques and medersas. The new function should be compatible with the type and the character of the existing historic building and socially appropriate.

IV. Rehabilitation⁶ of traditional houses

Finding:

Besides the finding related to the general physical condition of historic buildings, a series of unsympathetic changes of distinctive materials, features, spaces, is noticeable:

- changes to surfaces and finishes (unpainted to painted, noura to cement; monochrome (white) to polychrome);
- blocking of windows, removal of shutters;
- visible replacement feature that does not convey the same visual appearance (replacing a wooden door or porch with metallic ones, replacing a traditional ceiling with shaped timber beams and ply wood; etc.);
- changing the type of finish or its color, such as applying oil painting or shiny varnishes on wooden elements;
- removal or loss of ornamentation;
- inappropriate coatings (oil painting for interior lime plaster decoration, shiny varnishes on carved wooden elements, etc.);
- insensitive additions (entire new floors are added on top of an existing building using new, untraditional materials such as cement, concrete blocks, reinforced concrete).

Maintenance. After identifying those materials and features that are character-defining and must be retained in the process of rehabilitation work, then maintaining them is addressed. For example, the maintenance of historic material includes treatments such as limited paint removal, and re-application of protective coatings; the cyclical cleaning of roof gutter systems. Alt-

⁶ The rehabilitation principles that apply to Zabid are included in appendix no. 2.

though a historic building will usually require more extensive work, an overall evaluation of its physical condition should always begin at this level.

Repair. Next, when the physical condition of character-defining materials and features warrants additional repairing work is recommended. Repair of brick masonry, wood, and nours plaster begins with consolidating, or otherwise reinforcing them according to recognized preservation methods. Repairing also includes the limited replacement in kind of extensively deteriorated or missing parts of features when there are surviving prototypes (for example, *kapsh*, the carved wooden feature that bracket the carved wooden lintel, and the timber beams of the ceiling).

Replacement. When the level of deterioration or damage of materials precludes repair, replacing an entire character-defining feature with the same material should be considered (for example a complete carved wooden porch), if the essential form and detailing are still evident. The preferred option is always replacement of the entire feature in kind, that is, with the same material. Where an important architectural feature is missing, its replacement is always recommended with an accurately reproduced one. A second acceptable option for the replacement feature is a new design that is compatible, in terms of size, scale, and material with the remaining character-defining features of the historic building.

Recommendation:

A systematic rehabilitation program should be designed for carrying out work on the entire stock of traditional houses. After identifying those materials and features that are character-defining and must be retained in the process of rehabilitation work, the following steps have to be considered: maintenance, repair, and replacement of deteriorated or missing features. Rehabilitation guidelines and manual are a very useful tool in this process.

Finding:

There is no available qualified personnel capable to ensure that work is carried out according to established conservation principles.

In order to secure a good understanding of the rehabilitation process, training courses and seminars explaining the principles and the complete methodological procedure have to be organized. This professional and technical support can be carried out through missions, training programs and technical co-operation, information on bibliography, documentation and data bases.

Recommendation:

Future responsible of rehabilitation work in Zabid should be recruited and receive adequate training.

Alterations/Additions for the new use

Finding:

Traditional house need to adapt to contemporary uses through alterations and additions. Local population lacks proper guidance in how to accommodate new standards without losing the historical character of their property.

Some exterior and interior alterations to a historic building are generally needed to assure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include providing new toilet and bathroom, modern kitchen, parking space on an existing historic building site; cutting new entrances or windows on lateral elevations; inserting an additional floor; installing an entirely new mechanical system.

No kitchen or bathroom may be installed in an existing traditional housing unit (*murabba, saffa, diwan, liwan, khalwa*, etc), but in the available spare space that lost its original function (such as grains storage, *dara*, etc.). Otherwise, already existing structures for such uses will be redesigned.

Alteration may also include the selective removal of buildings or other features of the environment or building site that are intrusive and therefore detract from the overall historic character.

The construction of an exterior addition to a historic building should be avoided, if possible, and considered only after it is determined that those needs cannot be met by altering secondary, non character-defining spaces). If, after a thorough evaluation of solutions using existing available spare space, an exterior addition is still judged to be the only viable alternative, it should be designed and constructed to be clearly differentiated from the historic building but also in harmony with it.

If the family property has to expand, and if land is available, the expanding process has to follow the rules of unit amalgamation and growth, proper to Zabid, that is adding one or more units in a strict order (1. murabba+saffa; 2. addition of a second murabba, a diwan, a mabraz, or a khalwa, etc.). The well-established shape, form and function for each additional unit should be respected. This is basically deducted from the dimension of timber trunks used for roofing (3,00m-3,50m) and furniture (modular combinations of 4, 6 or 7 *mumbars* (local bed) per room, which comes to 3 'standard' rectangles of approximately 2,50m x 3,50m; 3,50m x 5m; and 4,10m x 5,10m). New additions should follow the same recommendation established for new construction (see next section).

If the size of plot do not allow for such controlled changes, the existing house has to be left as is and the owner has to consider to move in a larger traditional or new property.

Amalgamation and growth scheme. A sound control of transformations in a historic town should be based on the knowledge of typological processes proper to a specific man-made environment. In order to retain and preserve the cultural identity of places, it is necessary to ensure the continuity of the typological processes which determined the city evolution over time.

A simplified reconstruction of growth mechanism indicates the chronological succession and derivation of main residential building types:

1. murraba + qabal (the basic type, which forms the majority of the urban fabric)
2. murraba + saffa + qabal
3. murraba + saffa + liwan + qabal
4. murraba + saffa + mabraz + qabal

5. murraba + saffa + khalwa + qabal
6. murraba + saffa + khalwa + dara + qabal
7. murraba + saffa + khalwa + tigwab + qabal
8. murraba + saffa + khalwa + 2nd murraba + qabal
9. murraba + saffa + khalwa + makhmula built over private entrance lane+ qabal (rare)

The basic residential type consist of a courtyard (*qabal*) and a one-room rectangular unit (*murraba*), a kitchen corner and a toilet. The next step is the addition of a second unit, the *saffa* (opened space, airy, ground level, for women and children); the murabba and the saffa are always symmetrical, facing eachother. The doors of each housing unit open toward the courtyard (qabal). From the third step on, different derivation of the type occur, accommodating growth according to the personal needs, and the size and shape of the plot.

Recommendation:

In adaptation/addition for new use of traditional houses of Zabid, the specific spatial organization and the ‘rules’ of unit amalgamation and growth, proper to Zabid should be known, understood and retain. The alterations should not radically change or destroy traditional spaces, materials, features, or finishes. Re-use of residual, spare spaces or land is preferred over additions. If addition is the only alternative, it should be designed according to planning regulations. Additions have to be clearly differentiated from the historic building but also in harmony with it.

V. Recent buildings within the historic area

Finding:

New construction is characterized by: no (or little) concern for continuity and respect of scale, size and height of adjacent buildings, distribution and positioning of windows and doors; non respect of the privacy principle (windows on the street facade instead of plain walls); imported features, such as balconies and other salient elements, imported typologies, (villa), appeal for Sana’a style (semi circular arch windows with a horizontal cross-bar, instead of local vaulted arch), etc.; introduction of new materials, new construction technology, new colors.

New construction has to be perfectly integrated with the existing context. The integration is not possible without full observation and understanding of the character of the built environment. In general, we should favor a contemporary architecture built in continuity with existing traditional structures, which means:

- control of the size, form and height of contemporary architecture;
- use of same materials, colors, and traditional techniques or compatible with the surrounding existing site;
- simple and modest architectural expression;
- control of the relationship with surrounding traditional houses (units built around a central courtyard of private character, ‘grape’ grouping of modular single-family units, private lanes linking the single family units with indirect access from the street through a doorway; no windows on the street excepting for non-residential units);

- the height of new constructions should not exceed the height of surrounding buildings
 - flat roof
- interdiction of an architectural expression or type imported from another region or country.⁷

Recommendation:

The new construction within the historic city has to be controlled through strict regulations and guidelines indicating which buildings have to be demolished or modified, and how new buildings have to be build. It should respect the traditional spatial organization, representative of an unique urban practice. In the homogeneous ensembles of traditional houses, new construction should match as much as possible the old houses, while being contemporary. The principle of continuity prevails - extreme cases of reconstruction in kind could be accepted.

VI. Souk Revitalization

Finding:

The town's formerly thriving old souk is moribund, threatened by a progressive physical and economic decay:

- general deterioration of structures due to abandon, lack of maintenance, neglect; many historical structures are partly ruined and the majority of spaces are not used or improperly used;
- deterioration or loss of traditional street roofs; partial replacement is made with materials that alter the overall historic character of the site (corrugated iron)
- lack of hygiene;
- development of a new market outside the old city, north of Bab Al-Siham, and of other new, competing markets, that have sprung up along the area's main road, built in 1969. The decline of the cotton and dyeing factories also affected the commercial souk activities.

Strategic issues

The souk should be linked to the main road, since markets traditionally develop in relation to a main road or a crossroads, through a commercial street, 'announcing' the old souk, attracting visitors to the souk.

By developing the city towards the north-east (actually rebuilding a part of a city that already existed in the past), including the Al-Bayshiya mosque, the eastern access to the city will be enhanced.

⁷ The dwelling type that the inhabitants mostly preferred is the *villa* type, choice that meant a social promotion as opposed to the traditional court-yard house type, oriented inwards. The planners should not take in account this preference but consider that the choice to live in an historic area necessarily means accepting the model of a traditional court-yard house and integration with elements of modern comfort.

The visibility of the souk from the eastern gate, Bab al-Shabariq, should be improved. The articulation between the two public spaces, the Bab Al-Shabariq place, and the souk has to be redesigned : shaded cafés, restaurants and inns could be located in this area. Now, the visitors cannot guess where the souk is located; nothing indicates its presence.

By developing a commercial area along the road linking the old city to the highway and the new development area, a risk exists in absorbing and concentrating the activities outside the souk. For making economic revitalization effective commercial and production activities have to be balanced by the creation of a second strong attraction pole to the opposite end (west) of the souk. This attraction could be created by conserving in priority the neighborhood of the Grand Mosque⁸, which includes major historic monuments of great cultural significance. Besides its architectural and urban values, this site has also a strategic interest : the revitalization of the souk greatly depends on the success of its rehabilitation. This project may include also the enhancement of the major monuments and the requalification of squattered, ramshackle settlement areas within this neighborhood.

An extension of the souk along the street linking the al-Ashair mosque to the Citadel square could also be envisaged in the framework of a tourism development strategy.

Recommendation:

The souk project, including physical and social-economical revitalization, has to be elaborated in relation to the development of a commercial zone between the eastern gate and the highway, and to the priority conservation, enhancement and requalification of the Grand Mosque neighborhood.

Physical revitalization

The physical revitalization process must be based on a thorough knowledge of the environment and on sound research (survey drawings, analyses of the present state, study of the historical development, evaluation).

The following principles have to guide this project:

- conserve as much as possible and retain the material integrity of existing structures
- restore the hidden or lost values
- maximum re-use of existing structures; conservative rehabilitation of existing structures should be given priority over reconstruction and new construction;
- integrate historic structures and compatible modern functions.

The prerequisite for this project is a firm definition of boundaries of the current souk area (comparison with the historic souk will indicate the natural development trend); and an accurate documentation on the nature of buildings, type of property and ownership.

⁸ This issue was already addressed by E. Keal and P. Bonnenfant and J.M. Gentilleau in 1998 and in 1999, respectively (*Zabid, patrimoine mondial, Saba*, nos. 5 et 6, p. 67), but only in terms of architectural values: little harmful new construction in cement and concrete; the presence of two major monuments (the Grand mosque and the West gate, Bab al-Nakhl); many other smaller but equally historic mosques; as well as some outstanding examples of traditional houses (the residences al-Hawaiji, al-Tabrizi, al-Marzuki, Muhsin Harun, al-Waqidi); al-Tabrizi dye factory, etc.

Recommendation:

Proceed to direct architectural surveys (measured drawings, photos, etc.), analyses, and evaluation of the souk area. A firm definition of the boundaries of the souk is a prerequisite to this step of the process.

Projects

These studies should be complemented with economic studies which will retrieve the historic branches of activities, and propose new activities to replace the obsolete ones (functional restructuring), according to the current market demands. Only based on these studies, the team in charge of the souk rehabilitation can proceed with the identification of a series of sub-projects dealing with the:

- rehabilitation of existing stalls, storage facilities, workshops, cafés, restaurants, caravanserais in reasonable condition and restitution of rest and qat areas;
- adaptation and re-use of redundant structures to a new function;
- reconstruction of ruinous stalls, storage facilities, workshops, cafés, restaurants, caravanserais;
- reconstruction of the wooden roof over the streets of the souk that offer protection against sun and rain; removal of the recent roofs made of corrugated iron, ply-wood, etc.;
- building new stalls, storage facilities, workshops, cafés, restaurants, inns, parking areas (spaces originally provided for standing mullets and camels in the backyards could be re-used for supply vehicles or parking areas for people working in the souk only);

Prioritary interventions that could be implemented before the completion of the technical documentation for the souk revitalization consist of:

- providing temporary protective measures in cases where a potential danger to the public is identified (propping damaged structural elements, stabilize deteriorated or damaged masonry until additional work is undertaken);
- treatment of the main causes of structural damages (differential settlement of the building, capillary action, insect or fungus infestation, etc.).

Given the complexity of the task, the souk revitalization project - studies, plans and documents - should be carry out by a multi-disciplinary team composed, in particular, of:

- specialist in conservation
- architect and urban-designer
- sociologist and economist.

Recommendation:

A multi-disciplinary team should carry out the souk project including the restoration of the most important monuments, demolition and reconstruction of ruinous structures, and rehabilitation, adaptation and re-use of existing structures and construction of new buildings. Until this technical documentation is completed, emergency interventions,

such as providing temporary protective measures and treatment of the main causes of structural damages, could be performed.

Archaeology

The souk seems to be the oldest section of Zabid continuously inhabited (the site is anterior to the Islamic period). Only a few test excavations ('carottages') have been done in this area by the Canadian Archaeological Mission. A proposal for systematic test excavations in the souk area has been submitted by GOAMM-Zabid to UCHSMP for financial sponsoring, but up until now no answer has been received.

Recommendation:

A consistent excavation program prior to any intervention, and coordinated with the souk project, should be considered.⁹

Public participation

Relating to the on site discussions and the failures of involving local authorities and population in decision-making, it is absolutely necessary to communicate with the population and to consulting them.

Recommendation:

The participation of the inhabitants, landowners, merchants, is the souk project is encouraged at various stages :

- information about the souk revitalization project
- their participation in decision making
- technical assistance
- further evolution of the project and review.

CONCLUSIONS¹⁰

As a summary, a review, in the light of the mission, of the objectives of the Zabid project and of the priority interventions, ends this report.

Objectives

⁹ This program might consist of:

- *Programmed archaeological excavations* in the area of the al-Ashair Mosque; and
- *Preventive excavation* prior to the execution of different projects in the souk area.

Evidence might be recovered relevant to earlier historical phases of the area, including ancient roads, foundations, walls, cisterns, fragments of ceramics, etc.

¹⁰ See also, in Appendix no.3, the notes prepared in Sana'a for Mr. Abdulwahab Al-Rawhani, Minister of Culture, as a summary of the meeting of 12 February 2002.

- at the town-planning level:
- to reconstitute the old street system and maintain the traditional urban typology and morphology; remove recent buildings that contradict the local traditional urbanism; to keep only those respecting the scale and the street patterns
- to guarantee a double continuity, one concerning the existing and planned street network, and the other concerning the new and old building stock (also valid for extra-muros areas)
- to rehabilitate traditional dwellings as to maintain the building typology and recover the spatial homogeneity of the area;
- to restore and to allocate appropriate, compatible social and cultural functions to the historic monuments in the area of the neighborhood;
- at the architectural level:
- to restore the main public monuments and private outstanding residences
- to rehabilitate existing buildings that are in reasonable condition
- to reconstruct traditional houses that are in a ruinous state
- to build new buildings within the historic fabric that reinterpret (up-date) the traditional court-house type and reintroduce traditional Tihama architectural features and decorative patterns to confirm the cultural identity of the area and to benefit from climatic advantages of this architecture.
- at the social-economic level:
- revitalize the souk area and the Citadel square
- programming houses to allow immediate relocation of population
- to provide homogeneity between the new construction and the surrounding historical fabric

Review of priorities

Immediate measures:

(actions that can be implemented until a comprehensive Conservation Plan has been prepared and adopted)

- solving the brick production;
- restoring property enclosure walls in order to recover the integrity of the street pattern:
- reconstructing the walls that are in ruinous state (visible traces, or documented through old maps, photographs, etc.);
- rehabilitating deteriorated enclosure walls;
- removal of illegal construction built outside the old property limits that does not have a residential use (enclosing walls, garages, storage, etc.);
- repairing, replacing, reconstructing deteriorated roofs - falling roofs lead to the abandoning, and thus collapsing of houses
- install propping structures to buildings that present severe structural disorders;
- complete the Quick scan with prescriptive data in order to designate the properties to be protected (including the historic monuments), not protected (that can be maintained,

replaced, demolish), or demolish (entirely or in part), and the type of treatment to be applied;

- install sewerage system and collection and disposal of solid waste.

Urgent measures:

(actions that can be undertaken according to a Preliminary Conservation Plan and regulations)

- solving housing problem as an alternative to the halting new construction imposed by previous mission as an emergency measure;
- rehabilitate traditional buildings ensuring each family an independent habitable area including a toilet, a shower and a kitchen corner;
- refurbish the old traditional houses;
- build scattered undeveloped areas and to rebuild empty sites within old fabric;
- demolish only recent structures that are built on public spaces (with no reconstruction permitted), or traditional buildings that are beyond repair, with obligation to reconstruct;
- relocate families who have to leave their homes due to demolition;
- build low-cost dwellings extra-muros in the designate redevelopment area;
- waterproof structures;
- restore the al-Ashair mosque, the Grand mosque and the Citadel mosque;
- restore several outstanding traditional houses; change of function could be envisaged;
- produce new design guidelines.

The future mission should precise more clearly the role of UNESCO in orienting the work for the conservation and management of the historic town of Zabid.

It is highly recommended that UNESCO prepare a Preliminary Conservation Plan and regulations that could guide further developing of this planning tool.

UNESCO assistance is also needed for advising on organizational aspects of Zabid project: establishment of a management hierarchy and responsibilities, and improvement of coordination and communication.