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Training of Museum Specialists,
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Archivists

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(T A N Z A N I A)

Training in Architectural Conservation
in the United Republic of Tanzania

by

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This report represents the views of the
author and not necessarily those of Unesco

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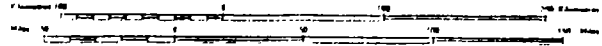
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LIST OF ABBREVIATIONS

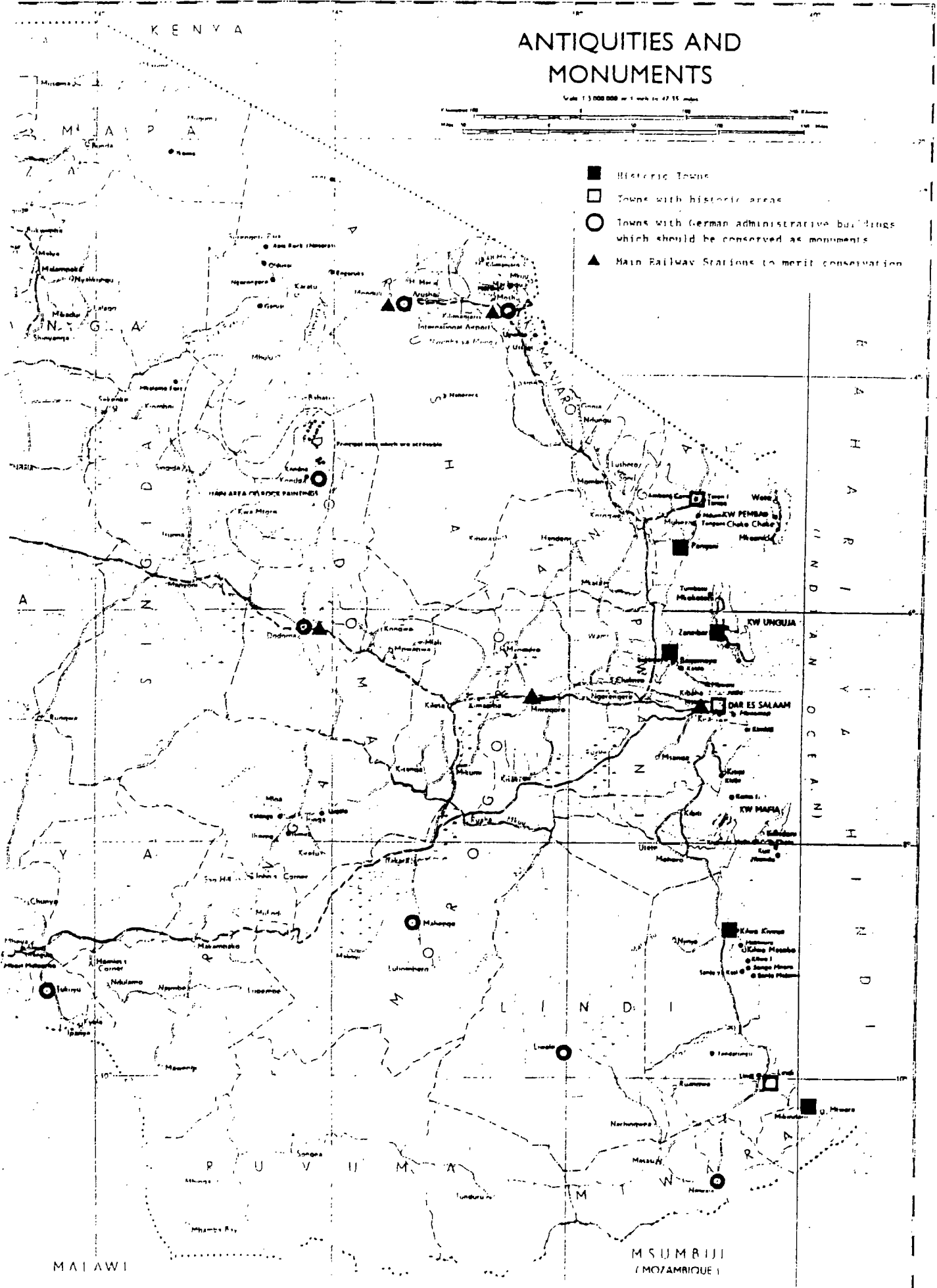
AAT	Architectural Association of Tanzania
BRU	Building Research Unit
DANIDA	Danish International Development Agency
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property, Rome
ICOM	International Council of Museums
ICOMOS	International Council on Monuments and Sites
NORAD	Royal Norwegian Ministry for Development Cooperation
OOMSA	Organization for Museums, Monuments and Sites of Africa
STDCA	Stone Town Conservation and Development Authority
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNDP	United Nations Development Programme
URT	United Republic of Tanzania

ANTIQUITIES AND MONUMENTS

Scale 1:500,000 or 1 inch to 47.5 miles



- Historic Towns
- Towns with historic areas
- Towns with German administrative buildings which should be conserved as monuments
- ▲ Main Railway Stations to merit conservation



MALAWI

MSUMBIJI (MOZAMBIQUE)

I. INTRODUCTION

Briefing of the mission

1. According to the contract, the aim was to undertake a two-week mission to the United Republic of Tanzania, for the purpose of holding discussions with the Tanzanian authorities on the creation of a sub-regional training course for monuments conservators at Bagamoyo (URT). This would include the preparation of a programme for the said course, geared to the needs of African countries in the tropical region. It was further agreed to explore more generally how architectural heritage could be defined in the region, what problems are faced, what skills and qualifications are available, and what general recommendations could be given for further action to guarantee the conservation of this heritage.

2. The mission was carried out from 12 to 25 March 1987. It included a briefing session at Unesco, travel to Tanzania with visits to Dar-es-Salaam, Bagamoyo, Zanzibar and some archaeological sites in the surrounding area. Meetings were arranged with the Authorities responsible for the built environment, including the Ministries for Cultural Affairs both in Dar-es-Salaam and in Zanzibar, the Ministries for Housing and Urban Planning, as well as educational institutions and professional architects.

3. The programme was efficiently organized by the Director of the Department of Antiquities, Mr. Amini A. Mturi, who interrupted his leave in order to be present during the mission in Dar-es-Salaam, Bagamoyo and Zanzibar. This provided an excellent opportunity for lengthy discussions both with Mr. Mturi, his colleagues at the Department, and other government departments on the situation in Tanzania concerning the protection, repair and maintenance of the architectural heritage of the country.

II. ARCHITECTURAL HERITAGE IN TANZANIA

Traditional buildings

4. Considering the climate of the country, it has been possible to produce buildings that are functionally efficient with traditional technology and with proper maintenance these should be resistant and provide very satisfactory environmental conditions to users. This is easily noticeable when visiting offices. Older buildings are naturally ventilated, cool and pleasant, while modern high-rise buildings are an intrusion in the environment and are unbearable to live in if they are not provided with properly functioning air conditioning and shaded windows. The Ministry responsible for housing and urban

development has verified that the squatter areas of Dar-es-Salaam, such as Manzese, built close together in cement blocks with corrugated iron roofs, have provided better social conditions than planned areas; the inhabitants are more easily organized and more responsibility is shown towards repair and upkeep of houses. Consequently, they will not be cleared, but efforts will be made to upgrade these areas by improving their facilities and by providing them with infrastructures.

Historic towns

5. Tanzania is divided into 25 Regions, 20 on the mainland and 5 in Zanzibar; these are subdivided into 96 Districts. Most of the regional centres and some of the district centres were founded in the period prior to independence and so the majority of the country's historic buildings are found in these centres. The most important of these are: Zanzibar Stone Town, Dar-es-Salaam, Bagamoyo, Lindi, Tanga and Kilwa. Several towns, both on the coast and inland, have administrative buildings dating from the German colonial period. They represent good quality architecture, are adapted to the climate, and are certainly also of historic value. In addition there are a certain number of interesting railway stations which would merit both attention and protection.

6. Certainly the Stone Town of Zanzibar is the most important of these, and also the best conserved. It is estimated to have a building stock of some 2500 units, but the figure could be higher. In addition, the administration presently in office puts this town in a special position in the country and in fact together with Lamu and Mombasa in Kenya makes it a pilot project in urban conservation for East Africa. The historic areas of Bagamoyo are protected by law, and there is hope that the establishment of the training centre will give a positive impact to the maintenance and repair of the historic buildings.

7. One of the major problems in Tanzania is the lack of maintenance. Attention is concentrated on building new. As a consequence, all buildings, old and new, suffer from neglect and abuse. High-rise buildings in a hot humid climate require high energy consuming equipment to control the air-conditioning and even water has become a problem. A great deal of the new machinery is out of service due to the lack of spare parts and maintenance. In 1980 the Government calculated that the repair of its existing offices would cost about 500 million Tanzanian Shillings (9 mill. US\$). In this regard, it is worth noting that DANIDA has decided to organize training in maintenance management for Tanzanian technicians who are responsible for school buildings which will be sponsored by Denmark.

Dar-es-Salaam

8. Concerning Dar-es-Salaam, there are still substantial areas built in the pre-independence era which contain a number of nineteenth-century and early twentieth-century buildings. A recent inventory has listed 161 buildings worth protection because of their architectural and historical value. The Department of Antiquities, however, maintains that instead of protecting these buildings one by one, aerial protection should be provided in order to preserve them in their context. The list includes the fine row of administrative buildings on the sea-front dating from the turn of the century, the botanical park around the Ocean Road Hospital (presently under restoration sponsored by the Federal Republic of Germany), and areas with good quality buildings from the 1920s and 1930s.

9. Unfortunately, the present development of the central area of the town has been oriented towards high-rise office blocks and hotels, which easily dwarf the older two or three-storey structures. The park area around the hospital has suffered from new development and old buildings are abandoned while waiting for decisions concerning their fate. There are regrettable examples of modifications to historic buildings - such as those presently made to the old railway offices, where reinforced concrete elements are being introduced to fill in the old round arch windows.

10. The battle to save the so-called Old Boma from demolition in 1979 was important in bringing public attention to the values of historic buildings. On this occasion, the Department of Antiquities was supported by teachers, architects, and even those who had previously been responsible for the demolition of the former New Africa Hotel building. No agreement has yet been reached however about the protective measures proposed by the Department of Antiquities.

Archaeological sites

11. Tanzania and Kenya form an extremely ancient site for mankind. In Tanzania, history stretches back to the beginnings of the evolution of Man and his Stone Age culture. In recent finds, sites have been dated back to some 1.8 million years. However, archaeological discoveries are concentrated mainly on the coast and in some parts of the inland. Stone Age sites with rock paintings are located mainly in the centre of the country around Kondoa, others exist in the north, such as Olduvai (where Dr. Mary Leakey discovered the skull of the earliest known man, Zinjanthropus) and on the islands of Zanzibar. Iron Age sites are situated in the north of the mainland. The coastal area mainly contains Islamic and other historic sites from the thirteenth century onwards. These are sites of ancient cities, such as Kilwa, which is on the World Heritage List (WHL) and Kunduchi, a more modest site near Dar-es-Salaam which was visited during the mission. These more recent sites contain mostly the remains of religious monuments, such as mosques and tombs, which for religious reasons have not suffered dismantling and re-use of materials, as is the case with residential buildings. There are also some sites with interesting architectural remains from the nineteenth century, such as those visited near Zanzibar, which deserve attention as well as protective measures.

12. Archaeological sites have already been the subject of attention for some time and explorations have been carried out especially by foreign missions. Some of these sites have been presented to the public and are well taken care of by regular custodians, others are listed mainly because of their scientific and archaeological interest to specialists. Many of these sites are hidden under vegetation and present difficulties of access to visitors. Regular lists of archaeological sites are published by the Government; (J. Russell in his 1980 report* provides a list). A map of generally accessible archaeological and historical sites has been published and is available to the public, but a more detailed inventory has not yet been drawn up.

Museums

13. Concerning museums and collections in Tanzania, the situation is somewhat gloomy. Although the ethnographic museum of Zanzibar is under repair at present --financed by the Federal Republic of Germany-- much of its contents have been

* See Bibliography, Appendix C.

lost. The Natural History Museum of Zanzibar is open to the public but the space is too small for the collection and there is no qualified curator. In Dar-es-Salaam, the National Museum has been closed to the public indefinitely due to frequent thefts and the building, which is relatively new, is presently used only for temporary exhibitions.

Indigenous architecture

14. The Building Research Unit (BRU) of Dar-es-Salaam has carried out a survey on housing conditions in all parts of the country and it is to be published soon. This survey will provide exact information on the various types of traditional buildings that are still used in different climatic zones, as well as on problems related to their survival today. There exists an Open Air Museum in the outskirts of Dar-es-Salaam where a number of traditional building types have been constructed as examples. This is not a complete collection of building types however, and the museum faces serious problems of maintenance due to the fact that each type of building has been adapted to the climatic and geographical conditions of its original context. By bringing this technology to another region, both a lack of building skills and materials was experienced. It was stated in the research project that although traditional technology was still used in all parts of the country --in some areas for up to 80-90% of housing-- modern housing is becoming increasingly dominant. In some parts only 10% of inhabitants still use traditional housing.

III. ADMINISTRATION OF THE BUILT ENVIRONMENT

Antiquities, archives and museums

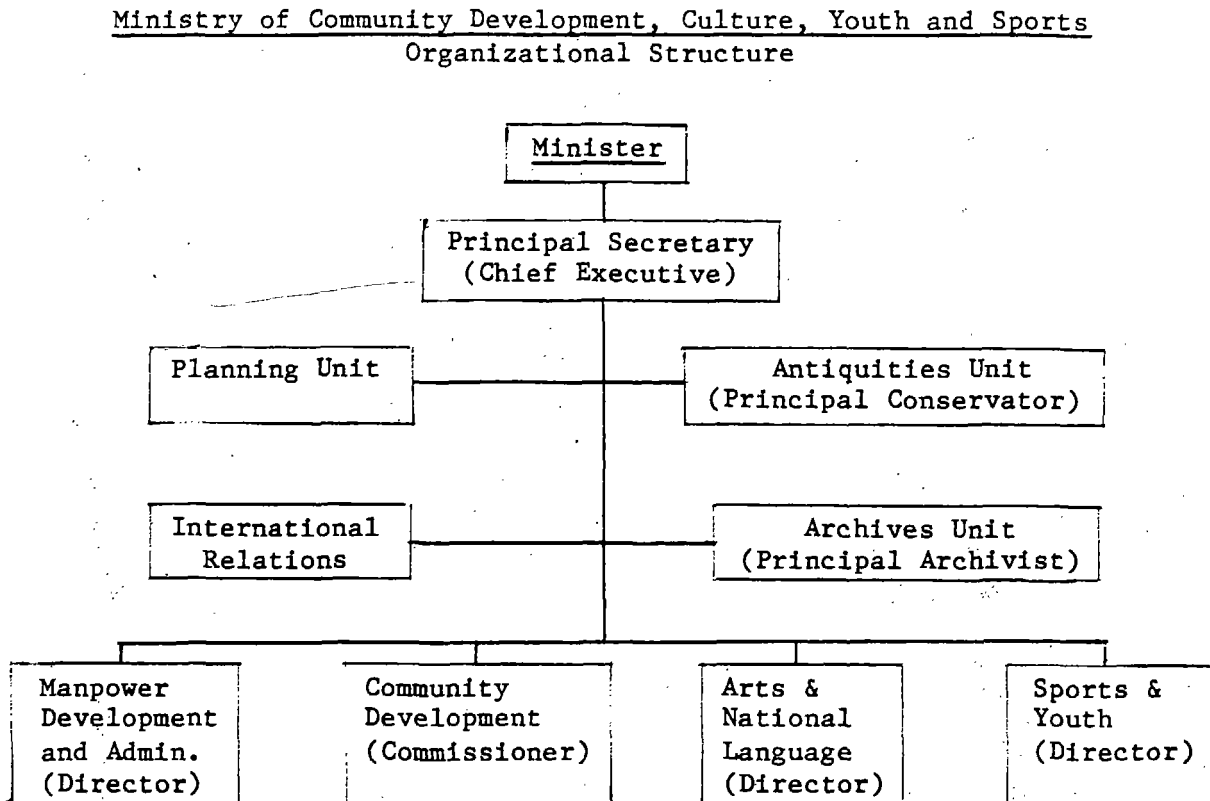
15. Tanzania has two separate administrations, one for the mainland and one for Zanzibar. On the mainland the Antiquities, Archives and Museums are under the administration of the Ministry of Community Development, Culture, Youth and Sports; there is a division between the Antiquities Unit, the Archives Unit and the Museum. The Antiquities Unit, under the direction of the Principal Conservator, Mr. A. A. Mturi, is in charge of archaeological sites as well as of historic buildings and areas which have been protected by the law.

16. The Preservation Act dates from 1964, but was amended in 1979 (published by Unesco: The Protection of Movable Cultural Property, Collection of legislative texts*). The amendment gives the possibility to declare any place or structure of historical interest a monument, and also "Conservation Areas" can be declared after consultation with the Minister responsible for Lands. The last category can be declared by the Minister if the area or site is in his opinion "a)... a valuable national heritage for its aesthetic value; or b) contains a homogenous group of monuments; or c) contains buildings, structures or other forms of human settlement which in his opinion are a valuable national heritage for their historical, architectural, social or cultural value." There are at present two conservation areas declared in Bagamoyo.

17. In Zanzibar the Antiquities, Archives and Museums are the responsibility of the Ministry of Information, Culture and Sports, and fall under the responsibility of one Department, while Culture and the Arts are separated into another Department.

* See Bibliography, Appendix C.

18. The organigramme of the Ministry of Community Development, Culture, Youth and Sports on the mainland of Tanzania is given below:



Planning authorities

19. On the mainland, urban planning is the responsibility of the Ministry of Land, Water, Housing and Urban Development; the Town Division prepares the Master Plans for urban areas, such as Dar-es-Salaam and Bagamoyo.

20. In Tanzania, urban planning is under the administration of the Minister of Lands, Construction and Housing. Recently for the Stone Town of Zanzibar, a new administration is being created under the same Minister (the Stone Town Conservation and Development Authority), which will have representatives from all the Ministries who will have the overall responsibility of the Stone Town.

IV. CONSERVATION IN ZANZIBAR

Stone Town Conservation and Development Authority

21. The Stone Town of Zanzibar has long been subject to concern due to the neglect of its buildings and because of rumours concerning its development. During the past two years the situation has however much improved. The Government is at present finalizing the legalization of a new office, the Stone Town Conservation and Development Authority (STCDA), which will have the full responsibility for the old town, and which has already started working and carrying out rehabilitation schemes and maintenance of historic buildings since October 1984.

22. This Authority is based on the recommendations of the UNCHS/HABITAT report published in 1983*. It has been initiated, coordinated, and is presently directed by Mr. Ahmed Sheikh Ahmed, an Ardhi architect from Zanzibar who completed his studies in the Architectural Conservation Course at ICCROM in 1983 and who has subsequently attended a Master's degree course in Management in London.

23. The STCDA will have representation from all ministries and it will have full responsibility for the conservation and rehabilitation of the historic Stone Town. At present, it has a staff of 25 persons, including four architects trained at the Ardhi Institute, a land manager and 5 with a technical school certificate. The staff will be increased to 60 persons. The office uses workmen from the Ministry of Housing; there are presently 20 masons, 17 labourers, 3 electricians, 1 builder of scaffolding, 5 painters, 7 roof workers, 5 plumbers, and 9 carpenters. Enthusiasm and dedication, clear responsibilities and autonomy in action are considered important; regular staff meetings are held every Monday morning. Much attention is given to staff training. Agreements have been made with the Ardhi Institute for upgrading courses for lower certificates funded by STCDA; sponsors are sought to provide possibilities of specialization abroad for those with professional diplomas.

Building activities in the Stone Town

24. STCDA is directed with great initiative and dynamic grip. Because of a lack of funds in the beginning, machinery and tools, which have been discarded by other departments, have been cleaned, repaired and put into working order. Today --even before the final legalization of the STCDA, there are already active workshops in carpentry and roofing materials. The plan is to establish a building courtyard to test materials, such as lime-mortar mixes. An old truck has been "restored" for material transport, and NORAD has provided a new pick-up car for small items and staff transport.

25. After the revolution of 1964, the Government nationalized private property in the Stone Town. When the original owners left their buildings, these remained abandoned in many cases and several even collapsed; in 1984 ten people died for this reason during heavy rains. Since then, the government policy has changed; private initiative is now favoured, money is returning to Zanzibar and there is a new demand for housing in the Stone Town where most administrative, educational and commercial activities are concentrated.

26. It has been calculated that the repair of the whole town would cost around 48 million US\$, which the Government cannot raise alone. At present, one third of the buildings are owned by the Government, one third by WAKF (the Islamic religious ownership) and one third are privately owned. In order to cope with the repair of neglected buildings, STCDA has proposed to sell some of those in very bad condition with little architectural value to private people. The conditions are that the buyer will repair the building following the STCDA guidelines, within a period of two years from acquisition. Failing this, the Government will take the building back and reimburse the price and expenses entailed. The price is low compared to present market prices. So far, 88 buildings have been sold and another 34 are to be sold presently. One third of those sold have already been repaired, one third are under repair, and the rest are being prepared for work. The proceeds go to the STCDA and form a recycling fund so as to

* See Bibliography, Appendix C.

acquire equipment and material for repairs. The intention is to create a stock of building materials which are made available for inhabitants at favourable conditions. Concerning government owned buildings, rents have so far not been sufficient to cover maintenance costs. In order to improve the situation, the proposal is to re-estimate the amount of rent on the basis of the real cost of repair and maintenance work.

27. The STCDA has also undertaken a number of rehabilitation schemes in government owned buildings. These include the repair and restoration of a run-down historic building to provide temporary offices for itself and work is presently being carried out in a nineteenth-century building on the sea front to provide permanent premises. An old merchant house is being rehabilitated as a crafts centre financed two-thirds by NORAD. The STCDA, although not directly carrying out the work, also acts as a consultant for other schemes. These have included the restoration of school buildings by the Ministry of Education during the past two years, as well as some work for the Department of Antiquities which will include its restoration of the Old Fort. This work will be given to a firm called B.B.B. (Beit-el-Ras Building Brigades) under the direction of a Danish constructor, who has already carried out other restorations in Zanzibar.

Conservation plan for Zanzibar Stone Town

28. The Stone Town of Zanzibar has been a flourishing commercial centre since the thirteenth or fourteenth century and it had a fair amount of stone buildings, at least in the eighteenth century; these included the Old Fort. The street pattern of the town is typically Islamic with narrow allies and abrupt turnings creating visually closed spaces. Older buildings represent the typical Swahili style with a roof terrace and central courtyard; houses open inwards and have rather stern and closed façades facing on to the street. Later, particularly in the nineteenth century, buildings show Asiatic influences and are common especially in bazaar areas; these often have balconies and small roofs that provide shade to the front of the shops. Since the beginning of this century, corrugated iron has been used to protect roof terraces from heavy rains.

29. Although the majority of stone buildings date clearly from the nineteenth century, the urban fabric itself is of much earlier origin. On the other hand, buildings have often been rebuilt re-using material from older structures and eventually respecting the traditional urban forms. No historical architectural study has yet been made of the Stone Town; this should be a high priority when preparing detailed guidelines for the conservation of the town. Considering that Zanzibar has for centuries been a centre for travellers, there must certainly still be descriptions and illustrations available. The archival sources of the town have not yet been used to the full. But the most important source of information is the Stone Town itself and its buildings which give concrete evidence of its history and its past development. It is through the study of the building types and their structures that a full appreciation and clear definition of the historic urban fabric can be reached. It is on this basis, completed with architectural evaluation, that the criteria for restoration and rehabilitation should be based.

30. In the various urban plans proposed for Zanzibar during this century, essentially the Stone Town has been conserved, although --particularly in the past-- it has been proposed to cut new streets through it. Similarly, the Master Plan which is presently being prepared with the assistance of experts from the People's Republic of China has preserved the Stone Town area at the same time

proposing that it be used more extensively for tourist purposes, and suggesting that the present government institutions, schools and various services be concentrated in new areas.

31. The UNCHS/HABITAT report of 1983, however, while confirming the need to alleviate the traffic in the central area and opposing any new streets, emphasizes the necessity of maintaining a mixed use in the old town. It argues that it would be difficult to provide the funds necessary for adapting the palaces now occupied by offices into hotels. On the other hand it is feared that the character and vitality of the centre would suffer should it be transformed for tourist use. It is also to be remembered that the present offices are relatively small in size and do not necessarily require changes to the original structure that would cause problems from the conservation point of view. The schools, on the other hand, could be reconsidered; while keeping those originally built as schools, removal of others to surrounding residential areas would reduce traffic in the peak hours.

32. Considering that the STCDA has so dynamically started promoting the active preservation of the Stone Town, and considering that no detailed analysis has yet been made of the old town, it is recommended that major attention be given to the preparation of an urban conservation master plan with detailed instructions on the repair and rehabilitation of the various types of buildings. This should include a detailed survey of all the fabric, a historical critical analysis of building types, a survey of the present conditions of the buildings, as well as a socio-economical analysis of the population. The guidelines should provide clearly defined limits to the transformability and use of the buildings, as well as instructions on the techniques and materials to be used in the repairs, (as recommended by the STCDA, as little cement as possible should be used in grouting; a possible mixture for testing could be: 1 cement + 3 lime + 10 aggregate). Some material is already available for the preparation of guidelines, such as measured drawings by students from the Ardhi Institute and some foreign universities. These documents exist at the STCDA. Photographic surveys have also been carried out recently.

33. It is understood that although there is plenty of energy and enthusiasm being put into the preservation project, there is a lack of experience in this field. Consequently, external assistance would be required --and certainly merited. Considering that UNDP have offered to provide a specific fund for the conservation of the Stone Town, this matter was discussed with the Hon. Minister who agreed to accept the offer. On the basis of further discussions with the STCDA, it is recommended that this fund be used to provide a consulting conservation planner with a solid understanding and experience in urban conservation methodology in Islamic towns. The consultant, who should visit Zanzibar at regular intervals over the period of two to three years necessary for the preparation of the plan, should work in collaboration with a team at the STCDA which should include a resident conservation planner who has had previous experience.

Training in rehabilitation

34. Considering that the Stone Town of Zanzibar will provide an on-going construction site with concrete examples of rehabilitation and a possibility for research and testing, it is recommended that this opportunity be used also for training purposes.

35. One of the principle problems in Tanzania has been the lack of concrete examples in conservative rehabilitation, consequently any discussions have tended to remain rather theoretical, often provoking cynical reactions. Being able to show that traditional technology is a living tradition and that it is practicable in reality will put conservation of historic areas in quite a different light. It is understood that particularly the younger generation of architects and planners would be more sensitive to the conservation of cultural heritage, consequently, refresher courses or seminars could be organized in Zanzibar which would also benefit from the preparation of the conservation master plan for the Stone Town.

36. The courses concentrating on the study of traditional architecture and technology, repair and maintenance management and the concepts of urban conservation methodology could last two to three weeks. The courses could be organized in collaboration by the STCDA, the Department of Antiquities of Dar-es-Salaam and the Ardhi Institute, with the contribution of external planning consultants working for the Stone Town project. It would be desirable that UNDP, Unesco and ICCROM be involved in this training to provide the necessary financial support and technical advice.

Information of public and collaboration

37. The STCDA recognizes the need to be known. A public information campaign has already been prepared including posters that show the emblem of the STCDA (the Old Fort and the House of Wonders seen through a Zanzibar doorway with curved underlining expressing dynamic action) and 3000 stickers have been printed in the Federal Republic of Germany. A series of TV programmes has been prepared by a German team. An international or regional seminar is being planned to launch the conservation plan. Assistance is sought from the UN, the Aga Khan Foundation and others.

38. A proposal of collaboration was made between East African countries, particularly with Kenya with which contacts already exist, and it is proposed that in the case of mutual visits, travel costs could be covered by the guest, while the hosts would be responsible for all expenses in the host country; in this way the use of foreign currency could be avoided.

39. Recognizing the advantages to both sides, collaboration with the Bagamoyo training centre was also agreed to with great interest.

Antiquities, archives and museums

40. In discussions with the Department of Antiquities, Archives and Museums and the Department of Culture and Arts of Zanzibar, which were created in this form only last year, emphasis was laid on the urgent need to obtain technically qualified personnel. The museums have no curator at present. One person is studying archaeology at Cambridge. It was estimated that the most urgent need would be to train five persons:

- one in natural history,
- two curators (ethnograph + scientists),
- an exhibition designer, and
- a registrar.

The ethnographic museum building is currently under repair and is being financed by the Federal Republic of Germany.

41. The Director of Antiquities himself is a trained archivist and the archives are in a fairly good state. Air conditioning has recently been provided with the help of Unesco.

42. Some nineteenth-century archaeological sites were visited. There are some 30-40 sites where nothing has been done since 1964. The problem is to decide where to start. Funding is a major problem. Unfortunately, the budget of the Department has only allowed some minor cleaning of the areas, but no repairs. Consequently, ways have been sought to find sponsors to guarantee regular maintenance.

43. The ruins of a Sultan's palace, Maruhubi (c. 1870), not far from the Stone Town, have been the subject of discussions to make them into a restaurant for tourists or a small hotel. While accepting the idea in principle, it was proposed that prior to any agreement, a careful archaeological survey should be carried out on the whole area in order to provide an overall understanding of the extent of the structures and to avoid any unnecessary destruction. It was agreed that the ruins should be consolidated where necessary and presented to visitors with appropriate information. The available covered spaces could be used for this purpose. The former swimming pools should be cleaned and filled with water, but they would hardly be suitable for use as modern swimming pools complete with all the technical equipment. Any modern structures should be small in scale and built with full respect of the character of the architectural remains and the surrounding park.

44. A visit was made to two small nineteenth-century bath houses built in 1840 by the Sultan for his Persian wife. The buildings are situated separately at a distance of several kilometres from the Stone Town (the roads are in very poor condition). The buildings are in coral stone and consist of a series of small domed spaces, one of them had elaborate stucco decorations inside. The buildings were probably surrounded by a garden layout with fruit trees as well as some other minor buildings of which little remains today.

45. It was proposed to use these sites for training purposes. Archaeological students could carry out an extensive field work project, consisting of archival research, excavations on the site, and identification of the extent and layout of the site and its garden. In addition, the Bagamoyo conservation course could use this site as a field work project and make essential repairs and maintenance work.

Cultural and artistic activities

46. The new Department of Culture and Arts is concerned with the organization of training for the revival of traditional crafts, e.g. carving of decorated doors, making of shoes, capes and dresses, etc. Local exhibitions have been organized by trained craftsmen in order to encourage others. Contacts of trained craftsmen with the Bagamoyo training centre were considered important. The proposal has been made to use the Old Fort as an open-air theatre for traditional dances, etc. There is growing collaboration with television. The director of the Department has been collecting nineteenth-century water colours and is planning an exhibition.

V. EDUCATIONAL AND RESEARCH INSTITUTIONS

Institutions of learning

47. It is considered useful to give a general picture of education in Tanzania in order to appreciate the facilities and professional skills that are available. Emphasis is given to agricultural and general management skills, but also technical professions are considered. There are facilities for the training of engineers, scientists, planners and building designers, and there is a building research institute interested in traditional technology. The training of architects will need special attention in the future as the present system does not satisfy the needs of the country. There is also a shortage of building technicians and skilled craftsmen. In the development of conservation training, it is important to take the existing facilities into account.

48. Obviously there are problems especially in the attitudes prevailing amongst technicians and scientists who do not seem to be particularly keen in cultural heritage and its conservation. Considering, however, the multifaceted character of cultural heritage and the requirements for its conservation, it is of great importance to communicate with these disciplines. Properly coordinated they would provide a scientific support for the development of conservation sciences in the country, and they would also be a source for eventual instructors in conservation training. It is noted with particular satisfaction that maintenance and repair --although still not sufficiently considered-- is already being introduced in some training programmes, particularly in the Faculty of Engineering at the University of Dar-es-Salaam. It was also understood that collaboration with various technical institutions is feasible and in part already in existence. There is a need to enlarge this co-operation in the field of material sciences, biology, etc. to cover aspects related to traditional building technology.

49. Administratively several institutions are under different ministries which may cause some bureaucratic complications, but it has been seen that these problems can be overcome. The following list is to be considered indicative, and a more detailed survey of effective needs, as well as personal contacts with those responsible, would be necessary for the establishment of a functional network.

a) Vocational training

- i) Technical Secondary Schools offer post-primary crafts training in Carpentry, Joinery, Bricklayer mason, Mechanics, etc.
- ii) Vocational Training Schools mostly conduct upgrading courses for practising craftsmen and technicians and offer Trade Tests (Grades III, II and I). Craftsmen and technicians in building and construction trades can participate.
- iii) Technical Colleges exist in Dar-es-Salaam and in Arusha offering training for technicians at Certificate and Full Technicians Certificate levels. Areas covered include Civil, Electrical, Mechanical, Electronics, etc.

b) Professional institutes

- i) Institute of Development Management, Thumbe-Morogoro offers ordinary and Advanced Diploma and Certificate Courses in Public Administration, Accountancy, Hospital Administration, Materials Management, Local Government, Law, Business Management, Basic Management, etc.

- ii) Institute of Finance management offers Diploma training in Banking, Insurance, Accountancy, and Finance Management.
- iii) Ardhi Institute offers Advanced Diploma training in Architecture, Urban and Rural Planning, Building Economics, Estate Management and Evaluation, Sanitation Engineering, and a Certificate Course in Surveying.
- iv) Institute of Transport.

c) Universities

i) The University of Dar-es-Salaam:

- The Faculty of Arts and Social Sciences has several departments including History, Geography, Sociology, Art and Music, Languages, Economics, Political Science and several institutes: Institute of Kiswahili, Institute of Development Studies and Institute of Resource Assessment. There is also an Archaeology Unit which started in July 1985.
- The Faculty of Science has several departments, including: Chemistry, Physics, Botany, Zoology, Mathematics, and Geology.
- The Faculty of Engineering teaches Civil Engineering, Mechanical Engineering, Electrical Engineering, Chemical Engineering and Processes. There is also an Institute of Product Innovation.
- The Faculty of Law.
- The Faculty of Commerce and Management.

ii) The Sokoine University of Agriculture offers training in Agricultural Sciences, Veterinary Sciences, Forestry and Food and Nutrition.

d) Research Institutions

- Building Research Unit (BRU)

It was established in 1971 by the Government of Tanzania to serve as the building research institution of all building activity. Sections: Technical Section, Building Economy Section, Human Requirement Section, Information Section, and Administrative Section. It has its own office and laboratory buildings at Kijitonyama, Dar-es-Salaam, not far from the University and Ardhi Institute, with which it collaborates. It has a staff of 60 persons.

VI. TRAINING IN CONSERVATION AND MAINTENANCE

Need for specialized training

50. Considering the actual needs in conservation training in Tanzania, it is important to build up a pool of people, to inform them about conservation with the contribution of existing training institutions, to introduce the component of maintenance and repair of existing buildings in the syllabuses, and to organize intensive courses as an introduction to conservation emphasizing the basic ideas.

51. It is of great practical importance to train people on-the-job, particularly craftsmen and technicians with an understanding of conservation, repair and maintenance of traditional structures in coral stone and timber. It is to these people that the Bagamoyo Training Centre should be addressed in the first place although it could be later developed to incorporate other types of courses and eventually different specializations.

52. Training of archaeologists and technicians with or without previous training, but already working in governmental institutions, would require short refresher courses with emphasis on the definition of the heritage as well as on technical questions related to conservation.

53. There is a need to sensitize professionals, particularly architects, engineers and urban planners, who may not be directly involved, but who would have an impact on the conservation, maintenance and repair of existing buildings. This could be conceived as a series of short courses emphasizing the knowledge of African architecture, traditional technology, maintenance strategy as well as the basic principles of conservation. The duration of these courses or seminars could be of one to two months depending on how intensive they are.

54. The training of trainers and instructors is essential in order to have a home-nucleus of experts assisted by externals, in particular, scientists. This action should include:

- i) identification of available experts,
- ii) sensitization and forming of correct attitudes towards cultural heritage in order to promote the application of their knowledge to conservation, and eventually also
- iii) short seminars on the building up and use of didactic materials for training purposes.

55. Short courses and didactic seminars should be organized with the full collaboration of national educational institutions and professional associations. International organizations, such as OMMSA, the national committees of ICOM and ICOMOS, as well as Unesco, UNDP and ICCROM who are already actively supporting this action could also contribute to this.

Training of architects

56. University training in architecture has not been organized in Tanzania so far. Architects are generally trained in European countries: the Federal Republic of Germany, the United Kingdom, or the United States of America. There are, however, African universities with faculties of architecture, i.e. in Kenya, Zambia, Zimbabwe, Ethiopia, Nigeria and Ghana. Contacts exist with the University of Cairo. For Tanzanians, all these training possibilities mean studying abroad, and consequently are subject to the acquisition of foreign currency and they usually require foreign sponsorship. At present, there are some 60 qualified architects in the country, of whom 50% are expatriates.

57. Training is mainly concentrated on "international" architecture and technology. It was reported that although some architectural students may carry out studies on African architecture, this is not encouraged and is not given credit. Therefore, support was given to the African University which is being established

in Dakar. It was also recommended that African Architectural Schools should include in their syllabuses programmes on African traditional architecture and architectural history, as well as studies on the use of appropriate technology in modern architecture. It was also suggested that a 3 to 6 months post-graduate course be organized particularly on African architecture.

58. At present most training in the field of architecture in Tanzania is the responsibility of the Ardhi Institute where a three-year course is organized in Building Design. This training can be considered to have been crucial in providing technicians; most architectural posts in the country are filled with persons having obtained this diploma. An estimate by the Ardhi Institute gives the number of architects in Tanzania to be less than 150, out of which 50 should be Tanzanian. The degree is not recognized as an academic qualification, however, and the graduates find it difficult to have access to universities for further studies. This has been possible only through special agreements and cannot be considered satisfactory in the long run. The situation has been realized by the Ardhi Institute and plans are being made to improve the diploma qualifications by upgrading the three-year studies to five years.

59. The University of Dar-es-Salaam has also been considering the establishment of a Faculty of Architecture. To guarantee a proper qualification in architectural studies in the country, the possibility was put forward by several Tanzanians that the structure already in existence at the Ardhi Institute should be taken over by the University as a basis for the new Faculty. This would avoid the present confusion in qualifications and guarantee an appropriate setting for training in an academic institution.

Conservation approach by architects

60. Architectural training is in the interest of three ministries, the Ministry of Education (University), the Ministry of Lands (Ardhi Institute), and the Ministry of Works (in charge of projects). The fact that three administrations are involved has been considered an obstacle from the bureaucratic point of view, but in the meeting with the executive council of the Architectural Association of Tanzania (AAT), it was agreed that the Chief Designer of the Ministry of Works, also a member of the Council, should take an initiative on the training issue.

61. The attitude of practising professional architects to historic buildings and to their maintenance and conservation was discussed in the same meeting at the AAT and was found to be surprisingly negative. Considering that the main efforts of architects are oriented towards new buildings, and that there are not sufficient skilled workmen in the country, training of specialized technicians for the maintenance and repair of existing historic buildings was considered "a waste of human resources"! Several members of the Council of the ATT were definitely against working on historic buildings although some members expressed their regret about the drastic modifications to and demolition of historic buildings. It was understood that younger architects were more sensitive to cultural heritage and had also contributed actively in seminars organized on this subject in the past.

62. Members of the Council were very critical of some foreign sponsoring Governments who had for example built a new factory, had provided it with all the machinery but had not followed up the project further. After being left in local hands, the machinery was dispersed and the factory was standing empty! It was said that "a lot of time is needed as well as a long-term assistance programme" in order to make something happen in the country.

63. One of the main problems seems to be that those locally responsible do not feel their responsibility, do not feel that these problems touch them at all and consequently expect that someone else may do it. Continuous assistance from abroad may easily have an adverse effect and paralyze rather than activate. It was agreed that a better coordination of the various Governmental institutions was necessary and that special attention should be given to communication.

64. Considering that architects are those who should professionally guide workmen in the repair and maintenance of existing structures, and considering the present lack of information and lack of interest in this regard, an active sensitization programme is necessary. Full responsibility for this action should be taken by local institutions and professionals, but external assistance will be necessary. This programme could be started as a series of short courses connected with on-going practical rehabilitation projects, such as those of Zanzibar or those to be initiated at Bagamoyo.

65. At the end of the meeting, it was decided that the Council should meet again to discuss the issue further in depth. A recognition of the problems is expected, as well as a series of recommendations regarding the training of architects in African architecture and in repair and maintenance of historic buildings. The Director of Antiquities was invited to attend the meeting.

Training in architecture at the Ardhi Institute

66. The Ardhi Institute has its background in the 1960s but was established under its present name in 1972. It is dependent on the Ministry of Lands, Housing and Urban Development. Professional diploma courses are conducted in six departments, i.e. Architecture, Building Economics, Land Management and Valuation, Land Surveying, Public Health Engineering and Urban and Rural Planning. Short post-graduate courses are run by the Centre for Housing Studies.

67. In the Department of architecture the first students graduated in 1979. They were called building designers; today the title is "assistant architect". There are 25 students yearly; so far, 155 have graduated.

68. The Ardhi Institute has taken an interest in conservation studies, although it depended on available teachers and their interest and has not been systematically organized. Students have been measuring and drawing historic buildings, e.g. in Bagamoyo and in Zanzibar. Lectures and field assistance to students has been given in collaboration with the Department of Antiquities. These have included short seminars on the conservation of historic buildings; slide lectures prepared by the University of York on conservation in tropical areas have been shown, and recently a dissertation has been made on the conservation of the town of Bagamoyo.

69. Future plans for the development of architectural training at the Institute include a conservation option. Ardhi instructors desire to exchange experts with other schools and to have visiting lecturers from conservation centres, such as ICCROM. Contacts already exist with several African universities. Ardhi instructors are interested also in contributing to the training programmes at Bagamoyo. Staff training is given high priority; organized research activities, a well-equipped documentation centre, a laboratory and a model workshop are desirable. In particular there is a need for didactic materials, books, journals, and equipment. Ardhi has recently acquired video equipment and is eager to acquire video films for training purposes.

70. The problems of architectural training at Ardhi Institute are manifold. A major problem seems to be that of an academic qualification. This is a problem for the graduands because their diploma is not accepted as a proper architectural qualification although in practice they work as architects. It is also an obstacle when applying for additional university training such as a Master's Degree. Another problem is that the Institute continues to have difficulties in attracting qualified teachers. Changes of faculty are frequent, qualified instructors stay for too short periods, and there is a lack of continuity and dynamic spirit. Also the four teachers who had been trained as a part of a five-year UNDP project have left the Institute. The Department depends much on external assistance --particularly from the Danish agency DANIDA who finance the present Chief Lecturer, Mr. N. Kanafani, as well as supply equipment. DANIDA also provides external examiners to the Department.

71. Most of the documentation that has been prepared in the past has disappeared --carried away by those who had been responsible for the projects. There is no systematic collection of or facilities for documentation. In this regard, it will however be possible to have assistance from the Department of Antiquities where Mr. Kamamba has just completed his training at ICCROM and in Scandinavian countries with particular attention to documentation.

Training of engineers

72. The Faculty of Engineering exists since 1973 at the University of Dar-es-Salaam. It offers engineering education in: Civil Engineering, Mechanical Engineering, Electrical Engineering and Chemical and Process Engineering. In addition to the four year undergraduate studies, post-graduate programmes of two years also exist. The University has laboratory facilities e.g. for building materials, structures, soils mechanics, and surveying instruments, and can undertake tests or research on request from external clients. The tests and the research are carried out by the University staff. The Head of the Department of Civil Engineering gave information about the existing collaboration with the BRU on various research schemes and assured the availability of the facilities also for studies on traditional building materials.

73. It was noted with particular satisfaction that the Faculty of Engineering has expressed concern for the pitiful condition of buildings in Tanzania and has recognized the necessity to include courses in the curriculum on the maintenance and repair of existing structures. These programmes are being implemented at present. Particular attention in the teaching programmes is given to low-cost building components and low-cost construction equipment.

Housing Research at the BRU

74. The BRU has undertaken a major project on "Housing Condition in Tanzania", considering especially rural areas. This survey has been carried out in the whole country with the financial assistance of the Government of Tanzania and NORAD. The project was started in November 1982, the survey was concluded by November 1984 and the publication is being printed and is foreseen for later this year (1987). The team consisted of 3 foreign (2 architects and a sociologist) and 5 local experts (a sociologist and 4 architects). The survey material consists of measured drawings, photographs and detailed descriptions of the building types and sites, including reports on building technology, investment, design criteria, as well as sociological aspects.

75. The survey covered all types of residential buildings both modern and traditional. In the past, it was common to undertake building activities in villages in co-operation with the whole village; today construction work is generally carried out by specialized workmen. Traditional crafts are still practised although good workmen are getting increasingly expensive. In certain areas also, traditional building materials are getting rarer. In some parts of the country traditional housing is still used in 80-90% of housing, while in other areas, such as Kilimanjaro, the proportion is only 10-20%. In particular, the conic type of housing has mostly disappeared, while square-planned buildings have survived better.

76. It is recognized that there is a lot of confusion and misinformation about building technology. Attitudes in some areas of the country favour industrial production and the general housing policy preaches for the "modern" --i.e. cement blocks and corrugated iron roofs. It is realized however by some experts that stone has been traditionally used as building material for more permanent construction, and today experiments are also being carried out with burned brick.

77. The BRU is presently carrying out various research schemes on the use and improvement of traditional building materials and technologies. These include experimental housing types for rural areas. Roofs are generally a problem; therefore, experiments have been made in the use of a mixture of sisal with cement to produce roofing elements that could replace corrugated iron which generally lasts about ten years. It is interesting to note that in Lamu, Kenya, it has been calculated that the traditional palm leaf roofs have an almost equal duration, are better suited to the environment and cost much less. Corrugated iron is at present hard to get and is relatively expensive. Tile roofs have also been discussed.

78. The BRU is willing to extend its collaboration with other institutions to discuss research schemes and contribute to training programmes. They already have a good contact with the Faculty of Engineering of the University of Dar-es-Salaam.

VII. CONSERVATION TRAINING AT BAGAMOYO

A. Establishment of Training Centre at Bagamoyo

79. The Tanzanian Government has agreed to establish at Bagamoyo a training programme in the conservation, repair and maintenance of traditional types of buildings. The organization is the responsibility of the Department of Antiquities who are also going to provide the principal local instructors. The duration of the course is planned to be six months. The programme will be coordinated by a resident architect. The budget is estimated to be c. 200.000 US\$ for an initial period of 18 months including the preparation of the programme and the planning of site works; NORAD and the Ford Foundation will be covering about 80.000 US\$ each, and the Government of Tanzania will finance 40.000 US\$. The financial agreement has been confirmed for the initial 18 months, after this the results are to be evaluated. It is understood, however, that the intention is to continue the programme.

B. The aims of the training

80. The training programme can be seen to be multifaceted. On one hand it aims at diffusing knowledge on repair and maintenance of the traditional type of buildings both as a heritage of the country and as a substantial housing resource. On the other hand, it should promote the revival and up-grading of traditional building materials and technology in modern constructions. It also aims at a change of attitudes concerning historic buildings while providing concrete, financially and technically viable examples of conservative rehabilitation.

81. Mr. Mturi, Director of the Department of Antiquities, has made a general scheme for the course, but it is supposed that a detailed plan will be worked out by the resident architect after his arrival. The objectives of the training programme are not focused only on the participants, but the intention is to provide an opportunity for local craftsmen to participate in the field project and to upgrade their skills. Also the community of Bagamoyo as a whole should be involved through demonstrations and discussions in order to better understand the values of traditional buildings. There is an agreement with the Ford Foundation to finance a planner (a woman), to work with the project for two years, and the intention is to collaborate with the local authority to provide a conservation plan for the historic area of Bagamoyo.

C. The organization of the training

82. Mr. Alhasan Isaka, from the Ghana Museums and Monuments Board, who attended the courses at ICCROM and in York, has agreed to prepare and coordinate the first course. The initiation of the course depends mainly on his arrival. The courses are planned to have 12 participants initially, but could be increased to 20. They are aimed at technicians and craftsmen, already working, who have passed the second level of vocational examinations. Applications for the course have already been received and the participants are being selected at present. The twelve places have been divided so that the Zanzibar Department of Antiquities will get two, the Stone Town Authority two, and the mainland eight places.

83. There would be at least six local instructors in the course mainly from the Department of Antiquities: Messrs Mturi, Kamamba, Mpangala, as well as from the Stone Town Authority of Zanzibar (Mr. Ahmed). Two or three older experienced craftsmen would be involved who have the skills of cutting coral stone, preparing lime and carving wooden decorations. In addition, it is intended to invite three external lecturers for two weeks each, either from Lamu in Kenya, the United Kingdom Department of the Environment, the Council of Europe School for Training Craftsmen in Venice, Craterre (Centre international de recherche et d'application pour la construction en terre), Villefontaine, France, and/or from ICCROM.

D. Training facilities

84. Bagamoyo is a relatively small district centre; it has some 10.000 inhabitants who are spread over a rather large area. There are 60 old stone houses left in the town; others have been demolished in order to re-use the material. Today, historic buildings are retained mainly for their material value. The planning authority have accepted to declare two conservation areas in Bagamoyo; one in the centre, the other in the Mission. The meaning of the declaration has not been understood by many inhabitants. The stone buildings are even considered "alien" to African culture. Anyway, the owners expect the Government to cover the cost of repair and rehabilitation. In this regard, the training activities are hoped to provide an example and stimulate the interest of the owners to take care of their buildings.

85. The facilities for the course have been arranged on a temporary basis. The participants will be lodged in a private house. Instructors will use local guest houses and the resident architect and his family will have the use of an apartment. The classes will be held in a space reserved in a municipal exhibition area. The furniture, tables and chairs, etc. will be provided by the Government. Although not exactly in the centre, these places are at walking distance from each other. Later, the intention is to restore the old Fort of Bagamoyo, presently used by the Police, and to establish the classrooms, work shops, and accommodation there.

86. The participants are expected to work on a field project during the second part of the course. One of the six historic coral stone buildings that have already been recorded by Ardhi students will be chosen for this purpose. The most probable is a two-storey private building, a former hotel, which is abandoned at present. The building consists of walls built of coral stone and lime mortar, floors with mangrove beams and a wooden roof structure with corrugated iron sheets. The building presents a great variety of typical repair problems. Although the structure shows some cracks, it is still relatively solid. Part of the floors and the roof must be rebuilt. The windows and the carved door decorations in hardwood also need repairing. In addition, the participants would use some time in the early part of the course to remove eyesores from buildings, such as trees and grass, and make small emergency repairs to fix falling elements, etc.

E. Training programme

87. The training programme will consist of a theoretical part and a practical part. Emphasis will be placed on field exercises and working on the site. The theoretical section of the course would include lectures on History, Basic Principles of Conservation, Traditional Building Technology, Survey and Recording Techniques, Principles of Repair and Conservation, Maintenance Strategy, Conservation of Historic Areas, and Administration. The practical section of the course would consist of exercises on survey and recording techniques, practice with traditional materials (especially coral stone, lime, and local hardwood), the preparation of a project for rehabilitation and the restoration of a historic coral stone building. The field work would be carried out together with local craftsmen under the supervision of the resident architect.

88. The first part of the course would be concentrated more on theory with exercises, practice on building materials, small repairs and preparation of the rehabilitation project. The second part would consist mainly of field work with shorter discussions and seminars in the afternoon. The working hours would be from 8 to about 1 and again, about two hours later in the afternoon.

F. General schedule of the Course

a) Principles of Conservation

1st week: Introduction

- History
- Introduction to architectural heritage

2nd week: Principles of Conservation

- Evaluation of heritage buildings
- Basic principles of architectural conservation

3rd week: Survey of historic buildings
- Inspections and recording
- Causes of decay

4th week: Principles of Maintenance and Rehabilitation
- Maintenance strategy
- Rehabilitation technology

b) Traditional Technology

5th week: Traditional Stone Structures I
- Coral Stone
- Lime Mortar

6th week: Traditional Stone Structures II
- Principles of repair and restoration
- Conservation of decorative surfaces

7th week: Traditional Wooden Structures I
- Characterization of material
- Traditional wood working technology

8th week: Wooden Structures II
- Causes of decay, insects, fungi, treatment
- Conservation of wooden structures

9th week: Earthen Structures
- Indigenous architecture
- Earth as modern building material

c) Rehabilitation

10th week: Historic Areas
- Values of historic urban areas
- Infrastructures

11th week: Conservation Policy
- Detailed conservation plan
- Guidelines for conservation

12th week: Conservation Administration

d) Field Project

13th to 24th weeks

- Duration of about three months on the building site; additional lectures, seminar discussions and field visits will be included dealing with theoretical and technical questions of traditional building technology, repair and maintenance of historic buildings.

G. Course Programme for conservation technicians and craftsmen
(Theory part, 12 weeks)

a) History

- General and Cultural History of the Country: the lectures are aimed at giving a general historical understanding of the country, its social and economical development and its culture in the regional context. (6 h theory).
- History of Traditional Architecture and Crafts: this would give an historical overview of the types of buildings and the crafts and materials. The lectures should be based on available documentation, such as existing case studies and publications, as well as on a field study of Bagamoyo, Zanzibar and related sites. (6 h theory plus visits).

b) Principles of conservation

- Definition, significance and evaluation of cultural heritage: the definition and significance of the local architectural heritage should be understood in the general cultural historical context; particular attention should be given to definition of the values of historic buildings in their urban context. (6 h theory plus visits).
- General principles of conservation: international recommendations: continuity of tradition and the revival of traditional technology in the rehabilitation of existing buildings; definition of historical and artistic objects in relation to their historical and social context; the principles of authenticity of historic material and reintegration of losses; application of conservation theory in the African context; international guidelines for the conservation and restoration of historical and artistic objects, archaeological sites, historic buildings and areas. (12 h theory plus visits and site discussions).

c) Traditional building technology

- Coral Stone: characterization, cutting, dressing, construction techniques (foundations, walls, floors); coral stone seen as one type of limestone, its geological origin, its chemical and physical characteristics, and particularly the special requirements of coral stone as a building material; field exercise on the preparation of coral stone for use in construction; students should be involved in the building of samples of traditional types of foundations, walls, floors, and other structures. (6 h theory plus field work).
- Lime: production, use of lime as mortar, renderings, decorative renderings; the characteristics of lime should be compared with other materials, particularly adobe and/or cement. Lime should be produced in the field, and slaked. (6 h theory plus field work).
- Earth: characterization preparation for buildings, construction technology; recent knowledge of earthen building materials should be compared with the traditional techniques used locally; preparation of adobe, testing of its qualities, use in construction. The use of earth as a "modern" building material. (6 h theory plus field work).

- Hardwood: characterization, floor structures, roofs, fittings, carved decorations. availability and production of timber, soft wood and hard wood as material, basic characteristics and behaviour, effect of humidity, climate and ageing; the traditional use of wood in constructions, tools, cutting, carving; treatment of wood against insects and fungi; protection of wooden structures. (6 h theory plus field).

d) Survey and recording techniques

- Causes of decay: climate, humidity, organic growth, animals, natural disasters; characterization of different types of environment present in the East African region; the effect of the climate on buildings, sun, wind, rain; definition of humidity and dampness in buildings, relative humidity, leaking, rising dampness; survey, diagnosis and protection; conditions for organic growth and insect attack in buildings; identification of causes of damage, protection and conservation treatment. (20 h theory plus laboratory and field exercises).
- Description of a building, visual inspection, reporting: preparation of a written description of a traditional type of building on the basis of a visual site inspection; identification of the conditions in the building, what is in order, and where lie the most obvious problems. (4 h theory plus a field exercise).
- Recording techniques: measured drawings, photography, use of topographic instruments; the elements of the preparation of simple measured scale drawings, floor plans, sections, elevations, with some details in larger scale; use of photography in documentation. (6 h theory plus field).
- Archival research: introduction to the organization of archives, available documentation, research techniques. (2 h theory plus visits).

e) Maintenance and repair of traditional structures

- Maintenance strategy and management: the need for cyclic maintenance of existing buildings; yearly inspections, priorities of action, regular maintenance, short term and long term maintenance plans. (4 h theory plus field exercises).
- Principles of rehabilitation technology: traditional use of buildings, correspondence of use to building type; definition of limits of intervention; use of modern technology in traditional context. (4 h theory plus visits).
- Structural repairs: consolidation, grouting of masonry, reinforcement of structures, foundations, floors; lectures should be accompanied by small exercises in Bagamoyo buildings in order to demonstrate the principles in practice. (10 h theory plus field exercises).
- Repair of lime renderings, conservation and repair of decorative plaster work, use of cement. (6 h theory plus field exercises).
- Repair of wooden structures: roofs, floors, windows, doors, conservation and restoration of decorative carvings. (6 h theory plus field exercises).
- Repair and installation of utilities, drainage, water pipes, fire-places, electricity. (10 h theory plus field visits).

f) Historic areas

- Characterization and values of historic areas, socio-economic aspects, infrastructures: the function of a traditional urban or village area; the significance of the whole as cultural heritage. (6 h theory plus visits).
- Classification of building types, analysis of historic areas. (6 h theory plus visits).
- Principles of conservation planning: preparation of a detailed conservation plan for a historic area; guidelines for conservation and maintenance of historic buildings; guidelines for eventual new buildings in an historic context. (6 h theory plus visits and site discussions).

g) Administration

- Management and cost control: comparison of the use of traditional technology and modern technology; evaluation and estimate of the cost of material and work. (6 h theory plus exercise and discussions).
- Direction of work sites: preparation of building for works, shoring, scaffolding, protection of valuable elements; programming and coordination of various skills. (6 h theory plus site discussions).
- Administration of conservation work: legislation and administrative framework for the control of the protection, conservation and rehabilitation of historic buildings; general aims in the programming of interventions; the role of various disciplines and skills. (6 h theory with discussions).

VIII. OTHER INSTITUTIONS VISITED

United Nations Development Programme (UNDP)

89. The offices of the UNDP Representative in Dar-es-Salaam were visited and a meeting was held with the Programme Officer. The telex from Unesco informing them about the mission was not found in the office. However, the aims of the mission were reported, and recommended action was discussed.

90. Mr. Mturi also raised the question of the special fund allocated to the Stone Town of Zanzibar, and the use of this fund to prepare a detailed conservation plan for the town was discussed.

91. The Programme Officer expressed great interest in the proposed action, and asked for a definition of the role of UNDP in suggested programmes.

The British Council

92. The British Council was sympathetic to the proposal to participate in promoting the conservation of Cultural Heritage in Tanzania. It was considered possible to provide travel costs for British experts to participate in training programmes.

The Embassy of Finland

93. In November 1986, during the visit of a Governmental delegation, the possibility of participation of the Technical University of Helsinki in the study and restoration of an historic building in Bagamoyo was discussed.

94. The problem was raised of finding Tanzanian candidates, such as architects and planners, with the necessary academic background to qualify for specialized training abroad.

IX. PRINCIPAL RECOMMENDATIONS

95. One can see signs of growing concern for the protection of traditional architecture and historic buildings in Tanzania. Apart from archaeological sites, historic urban areas have also recently been protected by law, and surveys of historic structures have been carried out by architectural students in collaboration with the Department of Antiquities; in Zanzibar conservation and rehabilitation of historic buildings has already started. It is important to note that since 1972 there is a Government decision not to demolish existing buildings in order to save resources.

96. The group of competent people involved in conservation is however still very small; the attitude of many towards historic buildings is marked by indifference and by cynicism. Historic structures are under continuous threat by developers. There is a lack of skilled workmen and technicians able to carry out repairs and maintenance, and there is a lack of education and training of professionals in traditional technology and building materials, as well as in African architecture in general. The country devotes its main attention to new constructions.

97. What is needed now is to pull together all existing resources in the country, and to coordinate well the efforts of protection and maintenance of historic buildings and areas. The only effective way is to proceed through concrete action in order to demonstrate the feasibility of traditional housing in terms of modern life and economy. A sound policy of repair and maintenance of existing structures, and particularly of historic buildings, must become a trademark of the country's welfare and development. This approach should be constructed simultaneously on different frontiers. Professionals should be encouraged to learn to understand historic areas, to put the right requirements in the case of rehabilitation, and to assist in educating the public to create a demand for quality and good workmanship, which would thus provide a market for skilled craftsmen and technicians.

98. Consequently, the following recommendations are proposed as a synthesis of the discussions and meetings in Tanzania.

A. Inventory of the Architectural Heritage

99. Considering that the architectural heritage of a nation is a concrete representation of its history, culture, and acquired knowledge, and that it thus forms an essential requisite for its status as a modern independent state, it is a priority project to prepare an overall survey of all the built heritage in Tanzania to enable its identification, location and evaluation, and consequently, to permit the planned action necessary for its protection, repair and maintenance to be implemented at all levels.

100. It is proposed to create an Atlas of the Architectural Heritage of Tanzania. This Atlas could be taken as a starting point for a similar action in all sub-Saharan countries in order to compare the heritage on an international level, to learn from the experiences in other countries, and to give mutual support in the protection and conservation of this heritage.

101. This material together with surveys carried out so far would also provide the necessary basis for the writing of an History of African Architecture which would be an essential tool for a proper appreciation of this heritage.

B. Maintenance and Administration

102. Considering that the construction and continuous upkeep of historic buildings in the past has represented a considerable technical, material and financial involvement over the times,

- considering that traditional architectural systems have been designed to suit local environmental conditions as a result of a long experience and thus do not generally need expensive high-energy consuming equipment to adjust the internal environment,

- considering also that traditional building materials can be produced or are locally available in the country today without recourse to foreign currency, and

- considering that the world's resources are limited, and that the existing stock of traditional buildings represents a substantial capital investment in economic terms as well as being a socially and historically established environment,

103. It is recommended that proper administrative and political action be taken to duly recognize the upkeep, repair and maintenance of the built heritage as an essential part of the country's national economy.

104. Provisions and well designed guidelines for yearly repair and maintenance based on regular inspections should be made part of the routine administration of all public and private buildings and their surroundings.

105. Particular attention should also be given to the sensitization of administrative officers responsible for the planning and administration of the built environment.

C. Traditional Building Materials

106. Traditional building materials continue to retain their validity even in modern architecture, and this can be seen in all parts of the world --not least in Europe. The use of adobe has been given increasing attention in the United States, France and Germany, and bricks, stone and timber are commonly used in modern construction technology.

107. It is recommended to give due attention in modern scientific research to the use and eventual improvement of traditional types of building materials, such as adobe, burnt bricks, stone and timber; to investigate the characteristics and the behaviour of these materials, as well as the state of preservation of the Built Heritage and to identify the problems and the causes of decay.

108. It is recommended that technically and scientifically trained persons, as well as equipped research laboratories specialized in related fields, be identified and that advantage be taken of these resources and facilities.

D. Conservation of Historic Areas

109. Preparation of proper conservation master plans for all those cities and historic areas that contain a substantial amount of heritage buildings should be foreseen in order to guarantee the conservation of all relevant values. This would apply especially to the Stone Town of Zanzibar, to Bagamoyo and to Dar-es-Salaam. The planning should be accompanied by proper information; owners of the buildings and of the public in general should be involved in order to strengthen educational aspects. Training seminars and short courses should also be related to these projects in order to take the maximum benefit from the on-going works.

110. Considering the rehabilitation work going on, the plan is urgent in Zanzibar. The available UNDP funds should be used for this purpose by providing an experienced external consultant, as well as, eventually, a resident conservation architect-planner to work within the STCDA Authority.

111. In Bagamoyo, in agreement with the Ministry of Culture, the Ministry of Public Works will provide an urban planner for two years to work on the preparation of a detailed conservation plan. In order to guarantee the best results, an experienced external consultant would be required.

112. In Dar-es-Salaam, considering the present pressure made by developers on existing historic buildings, appropriate measures to guarantee their protection and the provision of guidelines for their upkeep and eventual rehabilitation can be considered urgent. Here also, and in co-operation with the Ministry of Culture and the Planning Authorities an external consultancy would be desirable.

E. Educational and training programmes

113. Concerning education and training, there is a need for coordinated efforts at various levels in collaboration with the educational and research institutions, authorities, and professional associations. This training is articulated in the following categories:

a) Teachers and didactic material

Organize seminars for technical persons to be involved as teachers in training programmes on:

- the principles of conservation: it is essential that teachers have a sound understanding of the principles of conservation because of their key position in forming the attitudes of professionals;
- the content of training programmes: scientists and technicians --even though not specifically involved in conservation-- can make an important contribution if properly placed in the context of the course;
- the courses could be of a duration of ten to fifteen days and would involve at least one external expert in didactic methods, as well as qualified local conservation professionals;

- teaching techniques and the preparation and use of didactic materials: effective didactic material can be produced locally often with simple means if the proper initiative is taken and the aims are made clear. Additional didactic material could be prepared in co-operation with the appropriate institutions --such as ICCROM;
- special assistance should also be given by making technical and scientific literature more easily available in African countries to teaching institutions and conservation students.

b) Technicians

Initiate specialized training in the maintenance and repair of historic structures at the Bagamoyo training centre for:

- conservation technicians and craftsmen;
- archaeological and technical staff of Departments of Antiquities. This training could be further developed in close collaboration with the eventual training of museum conservators;
- the courses are planned to last six months, and are divided into a theory section and on-site work period.

c) Professionals

Organize courses and seminars on traditional architecture, maintenance and preservation of historic structures for:

- professional architects,
- engineers and urban planners.

These seminars, initially of one to two weeks, should be organized in collaboration with professional associations, such as the Association of Tanzanian Architects, and eventually with universities. They are of great importance in order to win the support of professionals for the conservation of historic buildings. Highly recognized professionals should be invited from abroad in order to make a stronger impact. Longer courses, of two to three months, could also be organized later in order to provide an opportunity for further training in African architecture.

d) Conservators

Training of museum conservators is going on at ICCROM in Rome, in Jos (Nigeria), and is planned in Niamey (Republic of Niger). Close contact should be maintained between the various training projects to give greater force and didactic development, particularly in providing teachers.

e) Universities

Include courses and research in the history of African architecture and building technology, and in the scientific and technical knowledge of traditional building materials in the programmes of educational institutes that are responsible for training in architecture, engineering and urban planning.

- It is suggested that Unesco contact all African Universities and urge an adjustment in relevant programmes to include training in African architecture and maintenance of existing structures.
- It is further recommended that efforts be made to up-grade the training of architects in Tanzania on a normal university level.

f) Other Education

Primary and secondary schools should include teaching and sensitization on the built environment. These activities should be organized in co-operation with museums and other conservation authorities (it is understood that the National Museum of Kenya is already showing a good example along these lines).

g) Public Relations

Organize seminars, public lectures, publications, exhibitions, demonstrations, debates, etc. for the sensitization of:

- administrators who are responsible for the built environment,
- related professions, particularly scientists,
- the general public.

F. Regional meeting of architectural conservation

114. To provide recognition for the achievements in the protection of cultural heritage so far, and to give an official launching for future action, it is recommended to organize an international meeting for English-speaking African countries with the aim of defining the architectural heritage in these countries, the problems involved in its protection, and the coordination of education and training in this field.

115. This meeting should be at a decision-making level for all those who are involved in the administration and education of the protection, planning and conservation of the built environment and architectural heritage. These should include the Ministries of Culture, Urban Planning, and Education, the Universities, and Technical Institutes, the Associations of architects, engineers, and conservators. The meeting should be coordinated and organized in collaboration with Unesco, ICCROM, ICOMOS, ICOM, OMMSA and the UNDP. Other sponsoring institutes and foreign organizations could be invited to attend.

116. In order to guarantee constructive results, sufficient time should be allowed for the preparation of the meeting. This should include a preliminary inventory of the architectural heritage in each country, its typology, its conditions and its location. It should include a survey of the protective measures so far applied in each country and an identification of the problems involved. Particular attention should be given to the identification of educational and research resources in each country, and an evaluation of their availability for educational and training purposes. Preparatory missions to relevant countries might be necessary in order to assist in the preparation and coordination of the material for the meeting. The acts of the meeting should be published in due time in order to diffuse the information to all interested parties.

117. A suitable place for the meeting would be Mombasa (Kenya), considering its architectural heritage, the conservation survey undertaken recently, its connections with the surrounding areas and the facilities available for meetings. A second meeting should be foreseen after about four or five years in order to verify the results and to discuss the policy of further action.

APPENDIX A

Schedule of the Mission

- 12-13 March: PARIS, Briefing at Unesco.
- 14-16 March: DAR-ES-SALAAM:
- Ministry of Community Development, Culture, Youth and Sports, Acting Principle Secretary, Department of Antiquities;
- The British Council.
- 17-18 March: BAGAMOYO:
- Meetings with the District Authority and the Municipal Planning Office;
- Visit to the historic town and to facilities foreseen for the conservation training centre;
- Visit to the The Village Museum, outside Dar-es-Salaam.
- 19 March: DAR-ES-SALAAM:
- Ministry of Land, Water, Housing and Urban Development, Town Division;
- University of Dar-es-Salaam, Faculty of Engineering, Department of Civil Engineering;
- Ardhi Institute, Department of Architecture.
- 20-22 March: ZANZIBAR:
- Ministry of Information, Culture and Sports, Department of Antiquities, Archives and Museums, Department of Culture and Arts.
- Ministry of Water, Construction and Energy, Meeting with Hon. Minister;
- The Stone Town Conservation and Development Authority;
- Visits to the historic Stone Town of Zanzibar, and nineteenth-century archaeological sites (Maruhubi, Mtoni).
- 23-24 March: DAR-ES-SALAAM:
- UNDP, Programme Officer;
- Ministry of Community Development, Culture, Youth and Sports, Acting Principle Secretary;
- Ministry of Communications and Works, Chief Designer;
- Building Research Unit;
- Meeting at the National Museum with representatives of the Department of Antiquities, Ardhi Institute and Building Research Unit;
- Meeting with members of the Executive Council of the Architectural Association of Tanzania;
- The Finnish Embassy;
- Visits to sites in Dar-es-Salaam, including the Ocean Road Hospital and the archaeological site of Kunduchi.
- 25 March: Return to Rome.

APPENDIX B

List of persons met

DAR-ES-SALAAM

UNDP Representative in Dar-es-Salaam:

- Mr. B. Mahai, Programme Officer

Ministry of Community Development, Culture, Youth and Sports:

- Mr. A. L. Mzighani, Acting Principal Secretary*
- Mr. Amini A. Mturi, Principal Conservator, Antiquities Unit
- Dr. S. A. C. Waane
- Mr. D. M. K. Kamamba, Conservator Engineer
- Mr. A. A. Mpangala, Engineer

Ministry of Communications and Works:

- Mr. K. Sekwao, Architect, Chief Designer

Ministry of Lands, Housing and Urban Development, Building Research Unit (BRU)

- Mr. M. Mpuya, Sociologist, Director, Human Environment Section

Architectural Association of Tanzania (AAT), Dar-es-Salaam (Members of A.U.A. - Africa Union of Architects):

- Mr. B. J. Amuli, Architect, Chairman of Executive Council AAT
- Mr. M. Sumar, Architect, Vice Chairman
- Mr. A. T. H. Mwakyusa, Architect, Honorary Secretary
- Mr. H. S. Vidyarthi, Architect, Honorary Secretary
- Mr. K. M. A. Sekwao, Architect, Member
- Mr. G. J. Chavda, Architect, Member

University of Dar-es-Salaam, Faculty of Engineering:

- Dr. W. P. Segu, Head of Department, Department of Civil Engineering

Ardhi Institute, Department of Architecture:

- Mr. Nabil Kanafani, Architect, Senior Lecturer, DANIDA
- Mr. Moses E. Mkony, Architect, Acting Head of Department
- Mr. Godwin R. Kajuna, Architect, Assistant Lecturer
- Mr. Paul Lyamuya, Architect Lecturer, PhD Candidate Leuven
- Mr. Tumsiph J. Nnkya, Town Planner, Assistant Lecturer
- Prof. A. C. Mosha, Director of Studies
- Mr. Jorgen Andreasen, External Examiner

The British Council:

- Dr. Marcus Milton, Assistant Representative

The Embassy of Finland:

- Kari Toiviainen, Cultural Attaché

* In Tanzania the Principal Secretary = Permanent Secretary.

BAGAMOYO

District Administration:

- Mr. Mshanga, District Planning Officer, Acting District Executive Director

Municipal Administration

- Mr. Kaumu, District Administrative Officer

ZANZIBAR

Ministry of Water, Construction and Energy:

- Hon. Iddi Pandu Hassan, Minister of Lands, Construction and Housing
- Hon. Abdullah S. Haji, Deputy Minister
- Mr. Ahmed Sherif Ahmed, Director, Stone Town Conservation and Development Authority

Ministry of Information, Culture and Sports:

- Mr. Saamis S. Saamis, Principal Secretary
- Mr. Seif Salim Saleh, Director for Culture and Arts
- Mr. Omar Haman, Director of Antiquities, Archives and Museums.

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