2022

3RD ANNUAL CONFERENCE

PROCEEDINGS

‘‘CONSERVATION OF BUILDINGS IN URBAN AREAS IN AFRICA TODAY’’

JULIUS NYERERE INTERNATIONAL CONVENTION CENTRE (JNICC)
DAR ES SALAAM,TANZANIA

19TH -20TH OCTOBER 2022

Wabunifu building, 9 AQRB Street, 41101 Tambukareli, Dodoma, P.O. Box 2377, Dodoma

E-mail: info@aqrb.go.tz, Website: www.aqrb.go.tz

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS AND TRANSPORT

ARCHITECTS AND QUANTITY SURVEYORS

REGISTRATION BOARD (AQRB)

3RD AQRB ANNUAL CONFERENCE 2022

EVENT PROGRAMME

DAY 1: Wednesday 19th October, 2022

JULIUS NYERERE INTERNATIONAL CONVENTION CENTRE (JNICC)

''CONSERVATION OF BUILDINGS IN URBAN AREAS IN AFRICA TODAY''

Event Manager: CM. Leo John

Rapporteurs : Arch. Flavian Rugaimukamu & Arch.Emmanuel O.James

SESSION 1: OFFICIAL OPENING		
TIME	**ACTIVITY/EVENT**	**RESPONSIBLE PERSON (S)**
07:30 - 09:30	*Breakfast/Registration/Presentation/Sponsors Displays*	ALL
09:30-10:00	Arrival of Guest of Honor & Visiting of Exhibitions	Registrar, Event Manager
10:00-10:10	*Prayers*	Invited Religious Leaders
10:10 -10:05	*Introduction*	Registrar
10:05 -10:15	*Greetings from TIQS & AAT*	Presidents TIQS/AAT
10:15 -10:25	*Welcoming Remarks*	Registrar
10:25-10:35	*Welcoming Speech*	Board Chairman
10:35-11:05	Opening Speech	Guest of Honour
11:05-11:10	*Vote of Thanks*	Board Member
11:10-11:20	*Kidney Disease in Tanzania* *By Dr. Fatma A. Bakshi -Agakhan Hospital*	Event Manager
11:20- 11:40	Group Photo	ALL
SESSION 2:PAPER PRESENTATIONS		
11:40 -12:25	**Paper 1:** *'Architectural Heritage in Contemporary of Urban Planning'* *By TP.Peter Kranzhoff & Arch.Dr.Camilius .Lekule*	Session Chairperson QS. Dr. Medard Mushumbusi
12:25-12:55	Reaction from the floor	
12:55- 13:10	*Sponsor's Presentation*	*Sponsor*
13.10-14:00	LUNCH	*All*
14:00 -14:45	**Paper 2:** *Preserving the Built Heritage-Case of Zanzibar and Kariakoo Market, Dsm* *By Arch.Magdalena Msimbe & Arch. Irene Matafu*	Session Chairperson Arch. Casmil Ntobangi
14:45– 15:15	Reaction from the floor	
15:15-15:30	*Sponsor's Presentation*	*Sponsor*
15:30-16:15	**Paper 3:** *Impact of New Buildings in Historic Sites* *By Arch. Shabani W.Mwatawala*	Session Chairperson TP.Dismas Minja.
16:15-16:45	Reaction from the floor	
16:45 – 17:15	AAT and TIQS Business/Activities	President AAT and TIQS
17:15-18:45	*Visiting Sponsors*	All
END OF DAY 1		

DAY 2: Thursday 20th October 2022

JULIUS NYERERE INTERNATIONAL CONVENTION CENTRE (JNICC)
''CONSERVATION OF BUILDINGS IN URBAN AREAS IN AFRICA TODAY''

Event Manager: CM. Leo John
Rapporteurs : Arch. Flavian Rugaimukamu & Arch.Emmanuel O.James

SESSION 3: PAPER PRESENTATIONS		
TIME	**EVENT**	**RESPONSIBLE PESRON**
07:30 - 08:30	***Registration / Breakfast / Presentation/ Sponsor Display***	**ALL**
08:30 - 08:40	**Recast of Day 1 event**	**Rapporteur**
08:40 - 09:25	**Paper 4:** ***Urbanization and Vulnerability of Architectural Heritage-Case of Dsm CBD*** ***By Dorothea Mbosha & Arch.Dr.Swai Ombeni & Arch. Dr. Mpyanga Simon***	Session Chairperson **ID. Sayuni Mwamanenge**
09:25-10:55	**Reaction from the floor**	
10:55-11:15	*Sponsor's Presentation*	**Sponsor**
11:15-12:00	**Paper 5:** ***Cost Implication of Renovation Uncertainties in Conservation Buildings (The Heritage Stone Town Zanzibar)*** ***By Dr.Khalfan Amour***	Session Chairperson **Arch. William Ngowi**
12:00-12:30	**Paper 6:** ***Social Economic Implication of Conservation of historical buildings in Urban areas in Tanzania*** ***By Qs.Catherine Bhoke***	
12:30-13:00	**Reaction from the floor**	
13:00-13:45	**Paper 7:** ***The Current state and Opportunities for Improving the Preservation of Cultural Heritage Sites in Tanzania- Perspective of External Auditors*** ***By Yuster Salala & Esnath Henry***	Session Chairperson ***QS. Dr. Godwin Maro***
13:45-14:00	**Reaction from the floor**	
14:00-14:15	***Sponsor's presentation***	**Sponsor**
14:15- 14:20	**Presentation of Resolutions**	**Rapporteur**
SESSION 4: OFFICIAL CLOSING		
14:20 – 14:30	**Arrival of Guest of Honor & Visiting of Exhibitions**	**Guest of Honor**
14:30-14:40	***Welcome Remarks***	**Registrar**
14:40-14:55	***Welcome Speech***	**Board Chairman**
14:55-15:15	**Closing Remarks**	**Guest of Honor**
15:15-15:25	**Vote of Thanks**	**Board Member**
15:25- 16:00	**LUNCH**	**All**
16.00-18:00	**Visiting Exhibitions**	**All**
END OF DAY 2		

SPONSORS AND EXHIBITORS TABLE

S/NO.	COMPANY NAME	SERVICE OFFERED
1.	LOCK AND DOOR SYSTEMS	Modern locks and electronic Door Systems
2.	SIKA CONSTUCTIONS	Construction Materials
3.	AZAM TV	Media
4	SPANISH TILES	Supplier of Building Materials
5.	KAMAL STEEL	Manufacturers and Suppliers of Reinforcements
6.	KANSAI PLASCON TANZANIA LIMITED	Supplier of Plumbing Materials
7	PIPE INDUSTRIES COMPANY LTD	Supplier of Pipe Materials
8.	FMJ HARDWARES	Supplier of Building Materials
9	GYPSUM TANZANIA LTD	Supplier of Building Materials
10	TAISHAN TECHNOLOGY	Supplier of Building Materials
11	LODHIA STEEL INDUTRIES	Supplier of Building Materials
12	INSGNIA LIMITED	Supplier of Painting Materials
13	INSTITUTE OF CONSTRUCTION TECHNOLOGY	Training of Civil Technicians /Architectural Technicians , Artisans
14	SURVEYING EQUIPMENTS SERVICE CENTRE LTD	Supplier of Construction Equipments
15	Audiovisual Engineering Co Ltd	Supplier of Building Materials

16	**UTT AMIS**	**Financial Services**
17	**KILIMANJARO CABLES**	**Supplier of Building Materials i.e cables**
18	**3D DISTRIBUTORS (TZ0 LTD**	**Supplier of Building Materials**
19	**MOTISUN GROUP**	**Supplier of Building Materials**
20	**IMPORTS INTERNATIONAL CO. LTD**	**Importers of Building Materials**
21	**TBS**	**Quality Controllers**
22	**SIMBA CEMENT**	**Supplier of Cements**
23	**FINANCIAL SERVICES (MPESA; TIGO PESA)**	**Mobile Transactions**
24	**AQRB**	**Registration Board for Architects , Quantity Surveyors and Allied Professions**
25	**AAT & TIQS**	**Professionals Associations Services**

Paper No.1

Architectural Heritage in Contemporary Urban Planning

TP.Peter Kranzhoff

Managing Partiner, **Cappel + Kranzhoff GMBH**, Germany

&

Arch.Dr.Camilius Lekule (PhD)

Managing Director, Afri Arch Associates, Tanzania

Paper No.2

Preserving the Built Heritage-Case of Zanzibar and Kariakoo Market, Dar es Salaam

Arch.Magdalena Msimbe

&

Arch.Irene Matafu

Architectural Pioneering Consultants Ltd (APC), Tanzania

Paper No.3

Impact of New Buildings in Historical Sites

Arch. Shabani W.Mwatawala

Managing Director, RSM Initiatives, Tanzania

Paper No.4

Urbanization and Vulnerability of Architectural Heritage-Case of Dar es Salaam, CBD

Dorothea Mbosha;

Arch.Dr.Ombeni Swai

&

Arch. Dr. Simon Mpyanga

Ardhi University (ARU), Tanzania

Paper No.5

Cost Implication of Renovation Uncertainties in Conservation Buildings (The Heritage of Stone Town Zanzibar)

Dr. Khalfan Amour

Zanzibar, Tanzania

Paper No.6

Social Economic Implication of Conservation of historical buildings in Urban areas in Tanzania

QS.Catherine Bhoke

College of Engineering and Technology (COET), UDSM, Tanzania

Paper No.7

The Current state and Opportunities for Improving the Preservation of Cultural Heritage Sites in Tanzania- Perspective of External Auditors

Yuster Salala & Esnath Henry

National Audit Office of Tanzania (NAOT), Tanzania

SPONSOR'S ADVERTISEMENTS

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS AND TRANSPORT

ARCHITECTS AND QUANTITY SURVEYORS REGISTRATION BOARD

3RD ANNUAL CONFERENCE

AT JULIUS NYERERE INTERNATIONAL CONVENTION CENTRE (JNICC), DAR ES SALAAM

FROM 19TH TO 20TH OCTOBER, 2022

Architects and Quantity Surveyors Registration Board,
9 AQRB Street,
P. O. Box 2733,
41101 TAMBUKARELI, DODOMA.
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October, 2022

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LIST OF ABBREVIATION

AAT	-	Architectural Association of Tanzania
AQRB	-	Architects and Quantity Surveyors Registration Board
ARU	-	Ardhi University
CRB	-	Contractors Registration Board
CPD	-	Continued Professional Development
EAPP	-	Enhanced Articled Pupilage Programme
ERB	-	Engineers Registration Board
FY	-	Financial Year
MTEF	-	Medium Term Expenditure Framework
NCC	-	National Contraction Council
TIQS	-	Tanzania Institute of Quantity Surveyors
OC	-	Other Charges
PE	-	Personal Emoluments
SWOC	-	Strength Weakness Opportunity and Challenges
SP	-	Strategic Plan

1. INTRODUCTION

1.1. BACKGROUND

Regulation of Architects and Quantity Surveyors has a long history**.** During the colonial era Architects and Quantity Surveyors were regulated by the ordinance for registration of Architects and Quantity Surveyors No 37 of 1949 where registration was done under the Public Works Department.

After Tanganyika got independence in 1961; the Architects and Quantity Surveyors were regulated under the National Board of Architects, Quantity Surveyors and Building Contractors (registration) Act No 35 of 1972. Thereafter in 1997 the Board was separated and two separate Boards were formed; namely Architects and Quantity Surveyors Registration Board which was established under the Act No 16 of 1997 and Contractors Registration Board was formed under the Act No. 17 of 1997.

The Act No. 16 of 1997 was also repealed on October, 2010 and replaced by the current new law known as the Architects and Quantity Surveyors (Registration) Act No. 4 of 2010, Cap 269.

1.2. FUNCTIONS OF THE BOARD

Section 5 of the Act No 4 of 2010 provides Seventeen (17) functions of the Board among them are as follows:

1.2.1. To register and maintain registers and sub-registers of Architects, Quantity surveyors and their firms, graduate architects, graduate quantity surveyors, architectural technicians, architectural draughtsmen, both local and foreign, and to make decisions on application for their registration, annually;

1.2.2. To regulate the activities and conducts of architects, quantity surveyors and their firms, graduate architects, graduate quantity surveyors, architectural technicians and architectural draughtsmen;

1.2.3. To enter the building sites and inspect building or construction works for the purpose of verifying and ensuring that the works are being undertaken by a registered architectural or quantity surveying firms and that the works complying all the governing regulations and laws of the country including requirement for safety, an erection of signboard showing project details and to take legal action against defaulter;

1.2.4. To promote, monitor and provide continuing professional development opportunities and facilities for the study and training in architecture, quantity surveying and allied subjects;

1.2.5. To conduct examinations or professional interviews for purposes of verifying the competence to practice as professionally qualified architects or quantity surveyors or as to the adequacy of practical training in architecture or quantity surveying as may be approved by the board;

1.2.6. To take disciplinary action against architects, quantity surveyors and other semi professional registered by the Board;

1.2.7. To register construction works or projects;

1.2.8. To promote and enforce professional conduct, ethics and integrity of architect, quantity surveyor and firms practising or operating in Tanzania

1.3. VISION OF THE BOARD

To Leading Institution in regulating and Promoting architecture, quantity surveying and allied professions in construction industry in the region

1.4. MISSION OF THE BOARD

To regulate architects, quantity surveyors and allied professionals through registering, monitoring, promoting and safeguarding professionalism for the welfare of the public.

1.5. CORE VALUES OF THE BOARD

1.5.1. **Integrity:** The Board offer its services with highest level of ethics, confidentiality, sincerity and honesty.

1.5.2. **Professionalism:** The Board execute its duties with the highest professional standards, ethics and competency**.**

1.5.3. **Transparency:** The Board fulfil its duties and responsibilities in an open and transparent manner.

1.5.4. **Accountability:** The Board is accountable and responsible for its actions.

1.5.5. **Impartiality:** The Board is committed to be fair; equitable, unprejudiced unbiased and to be objective in delivery of its services.

1.5.6. **Team Work:** The Board is committed in working together through networking and cooperation.

1.5.7. **Customer focused:** The Board is accountable to offer quality services to meet customer's expectations.

2. OVERVIEW OF THE BOARD ACTIVITIES

2.1. THREE MAIN FUNCTIONS

The Board has 17 functions; however they can be grouped into three main functions:

2.1.1. Registration

2.1.2. Regulating, and

2.1.3. Development of Professionals.

2.2. REGISTRATION

Registration is the first activity of the Board where two main categories of registration is done namely individuals and firms. Despite this function; the Board has mandate of deleting any registered individual or firm who is not abiding with the requirement of the Act No. 4 of 2010 and its Bylaws 2015.

As on September 2021; registered professionals were **1, 188** and **405** practising firms. Over the year (October 2021-Sept. 2022) the Board has registered **157** professionals and **18** firms were registered with the Board. In other hand the Board deleted **16** Professionals and **5** Firms making the total to be **1,329** and **418** for professionals and firms respectively.

2.3. REGULATION

The second key function of the Board is to regulate professionals and their firms. Regulation is mainly done through site inspections for the intention of verifying that construction works are designed and supervised by professionals through registered Architectural and Quantity Surveying firms. The main checklist used in the regulation is through:

2.3.1. Presence of signboard at the construction works project

2.3.2. Evidence of proper supervision of the project by Architects, Quantity Surveyors

2.3.3. Evidence that the project is registered with the Board

Over a year (October 2021 - Sept. 2022), the Board inspected **2,354** Projects and **1,052** projects were registered.

2.4. DEVELOPMENT OF PROFESSIONALS

This is also a function of the Board which is meant to assist current and future Professionals are able to sharpen their professional competences in order to catch up with changes of new technologies in construction industry. Professional development is done by the Board by:

2.4.1. Conducting Enhanced Article Pupillage Programme (EAPP) for graduates.

2.4.2. Conducting short courses and Annual Conference for Professionals.

2.4.3. Sensitization activities done to Universities and Secondary School students.

Table 1: CPD Conducted From 2003 to 2021

DATE	THEME	PLACE	NO. OF PARTICIPANTS
20.03.2003	Insurance and Taxation issues in the construction industry	Dar Es Salaam	130
20.8.2003	Safety and Fire Issues in the Construction Industry	Dar Es Salaam	136
19.03.2004	Building Control process in Town	Dar Es Salaam	156
20.08.2004	Role of Professionals in Control of Urbanisation	Dar Es Salaam	166
1.4.2005	Impact of Globalization in Architecture and Quantity Surveying Services in Tanzania	Dar Es salaam	161
20.08.2005	Capacity Building in the context of Regionalization	Arusha	97
19.11.2006	Regulation of the construction industry in Tanzania	Dar Es salaam	155
31.3.2007	Professional ethics , practices and impact in construction industry in Tanzania	Arusha	160
14.09.2007	Management of Construction projects in Tanzania	Dar Es salaam	189
28.03.2008	Business Negotiation Skills	Morogoro	152
20.3.2009	Promotion public private partnership and the use of local building materials in Developing the Built Environment	Dar Es salaam	117
21.8.2009	The impact of global economic recession to the Construction industry	Dar Es salaam	177
19.03.2010	The impact of Building Industry in Global climatic change	Dodoma m	311
20.8.2010	Planning and Building Control in the Cities	Dar Es salaam	311
18.4.2011	The importance of ICT in the Construction industry	Dar Es salaam	317
5-7 .09.2011	Law and practice relating to Building works contract Agreements	Dar Es Salaam	402
23.4.2012	Sustaining the Qualitative practice	Mwanza	228

	of Architecture & Quantity Surveying in the East Africa Common Market		
24.8.2012	Ethics, Negligence and Insurance in the Construction industry	Dar Es salaam	278
14-15.04.2013	Emerging Business, Technical and legal skills required for sustainable practices of Architecture and Quantity Surveying in Tanzania	Morogoro	263
20.9.2013	Opportunities and Risks in Construction Industry in Tanzania	Dar Es salaam	306
20-21.4.2014	Use of Modern Technology and Challenges of Urbanization	Mbeya	343
18.9.2014	The public procurement Act No 7 of 2011 and its effects in the Built Environment	Dar Es salaam	354
14-15.5.2015	Impact and Benefits of utilizing services of Architects and Quantity surveyors	Dar Es salaam	440
17-18 .9.2015	Effects of Professional Ethics, Form of contracts and Taxation in the practice of Architecture and Quantity Surveying professions in the construction industry	Tanga	186
17-18.3.2016	New AQRB Bylaws and Entrepreneurship Skills for Professionals	Mtwara	198
23-24.3.2017	The contribution of public private partnership and institutions in the development of Construction Industry	Mwanza	233
12-13.10.2017	Mitigation of Earthquakes , Technical Audits and Maintenance in the Construction Industry	Dar Es salaam	354
17-18 .5.2018	The role of Architects , Quantity Surveyors and allied professionals in the advancement of industrial development and preservation of Buildings' Heritage in Tanzania	Dodoma	260
22-23.11.2018	Towards Achieving Affordable & sustainable built environment through energy serving efficiency practices in the Competitive East Africa Common market	Dar Es Salaam	241
4-5 .9.2019	Wajibu wa wadau wa sekta ya ujenzi katika kufikia uchumi wa viwanda endelevu kwa ustawi wa jamii	Dar Es Salaam	539
15-16 .10.2020	''Getting 2025: Project Delivery Methodology"	Dar Es Salaam	427
7-8.10.2021	Efforts Required to enable Professionals to Promote Development of Construction Industry in the Country	Arusha	480
TOTAL			**8, 267**

Total of **8,267** Professionals participated in the CPD events organised by the Board since its inception in 2003 in which 90% were Architects and Quantity Surveyors

3. PLANNED ACTIVITIES FOR FINANCIAL YEAR 2022/23

3.1. THE PLAN

The Plan and Budget for fiscal year 2022/23 is geared at enhancement of registration and enhancement of enforcement activities as one way of implementing Architects and Quantity Surveyors (Registration) Act No.4 of 2010. The Plan will basically address the following issues.

3.1.1. To sensitize eligible candidates for registration;

3.1.2. To register professionals, practicing firms and construction projects.

3.1.3. To conduct site and office inspection activities;

3.1.4. To conduct inspection in civil works;

3.1.5. To strengthen Professional research activities;

3.1.6. To strengthen MIS in site inspection to ensure effective enforcement

3.1.7. Development of Head Quarter Office at Dodoma

3.1.8. To Embed risk management activities in all activities

3.1.9. To conduct on job training with other related regulatory institutions, regional and international;

3.1.10. To build capacity for the Secretariat;

3.1.11. To conduct Continuing Professional Development seminars and Public lectures for graduates and professionals in architecture, quantity surveying and allied disciplines

3.1.12. To attend Local, Regional and International meetings relating to professional matters.

3.2. THE BUDGET

The Budget for fiscal year 2022/23 is implemented as stipulated in the plan and budget Guidelines issued by the Ministry of Finance and Planning annually. Annually Reports assist in assessing the progress made against the set targets, identify problems encountered and take the corrective measures aimed at improving the performance of an institution.

Table 2: Revenue Collection Estimates for Financial Year 2022/23

S/N	REVENUE SOURCE	ANNUAL BUDGET	REMARKS
A	**GOVERNMENT SUBVENTION:**		
1	Personal Emolument	1,193,159,900.00	
2	Other Charges	0.00	
3	Development	902,400,000.00	
B	**DONOR FUNDED**		
1	Development Partners	0.00	
C	**INTERNALLY GENERATED FUNDS (OWN SOURCES)**		
1	Prof & Firm Registration fees	116,600,000.00	
2	Prof. & Firm Annual fees	480,948,000.00	
3	Project Registration	2,310,000,000.00	
4	Sale of Publications	96,000,000.00	
5	Examination fees	36,040,000.00	
6	Insurance Commissions	6,600,000.00	
7	Office Rent	102,622,464.00	
8	Seminar and Workshops	228,000,000.00	
9	Other Income	158499149.00	
TOTAL		**5,630,869,513.00**	

4. REGISTRATION AND TRAINING DEPARTMENT

4.1. PURPOSE AND OBJECTIVE OF THE DEPARTMENT

Registration and Training department is responsible for registration and training of future and current professionals**.** Registration is mainly done for professionals, semi-professionals and practising firms. At the moment the Board register 8 categories of professionals namely, Architects, Quantity Surveyors, Architectural Technologists, Interior Designers, Landscape Architects, Construction managers, Building surveyors and Project Managers. In other hand training section is responsible for coordination of graduates for Enhanced Articled pupilage programme (EAPP) coordination and monitoring of conduct of Board's professionals examinations, preparation of annual events, Preparation of Continued professional development trainings (CPDs) etc. Also the department oversee project registration activities

4.2. REGISTRATION PROCESS

There are main three routes used by the Board for registration:

4.2.1. Oral and Written Examinations

4.2.2. Oral Interview Examinations

4.2.3. Direct Application

4.3. ORAL AND WRITTEN EXAMINATIONS

This is the main used by many persons registered by the Board. To qualify registration; a person is required to pass both oral and written examinations. These examinations are conducted after the candidate has submitted an experience report (logbook). Almost 95% of local registered professionals with the Board used this route.

4.4. ORAL INTERVIEW EXAMINATIONS

This is another window of registration where the candidate who is registered in other Professional Body (elsewhere) other than AQRB is interviewed and gets registered if he or she passes. In most cases this route is used by Foreign candidates and few Tanzanian candidates who have registration status in other countries.

4.5. DIRECT APPLICATION

This is the last route used for candidates is not entitled to pass through the above two routes. This route is commonly used for registration of semi-professionals such as graduates, technicians and other lower cadres.

4.6. PROFESSIONAL EXAMINATIONS OF THE BOARD CONDUCTED IN YEAR 2021/22

Examinations of the Board are normally conducted twice in a year; ie. May and October. Before attempting written Examinations; Candidates are required to submit and pass experience report (logbook). The following is the statistics of candidates who attempted Board's professional examinations in the financial year 2021/22 and those who were registered.

Table No. 3: Number of Candidates Attempted Board's Examinations in Year 2021/22

Profession	Logbook examinations		Written Examinations		Registered
	Attempted	Passed	Attempted	Passed	
Architecture	36	34	56	44	44
Quantity Surveying	75	71	91	75	75
Interior Design	2	2	4	4	4
Landscape Architecture	7	7	3	3	3
Technology in Architecture	15	14	17	15	15
Building Survey	2	2	5	5	5-
Construction management	2	1	7	6	6-
Project Management	-	-	-	-	3
TOTAL	**139**	**131**	**183**	**152**	**152**

Passing logbook examinations is a pre-requisite condition to attempt written examinations; also candidates who failed in previous examinations sessions are also eligible to attempt written examinations. That is why in some cases the number of candidates who are enrolled to attempt written examinations is bigger than that who passed logbook examinations.

In the other hand; the Board conducted professional interview for two (2) candidates who were registered outside the Country and all passed the interview and were registered. Also the Board conducted professional interview for three (3) project management candidates and were passed. Therefore making the **total of Registered Professional in a year to be One Hundred and Fifty Seven (157))**

4.7. REGISTRATION STATUS

Currently the Board **Registers eight (8) Disciplines** namely; Architecture, Quantity Surveying, Interior Design, Landscape Architecture, Technology in Architecture, Building Survey, Construction Management and Project Management. As on 30th September, 2022; total number of **1,329** professionals have been registered after deletion of **16** professionals. Also **418** firms have been registered with the Board which includes **272** for Architectural , **149** Quantity Surveying , **1** for Interior Design and **1** as Building survey firm and total of **5** firms were deleted to date. Also the Board has to date registered **1,218** Semi-Professionals. The main source of deletion is death and failure to pay annual subscription fees.

Table No. 4: Registration of Professionals Cumulatively as on 30th Sept. 2022

ARCHITECTS	Q/SURVEYORS	ID	LA	AT	BS	CM	PM	TOTAL
570	631	20	9	26	26	41	6	1,329

Figure 1: Histogram Showing the Current Registration Status of Professionals

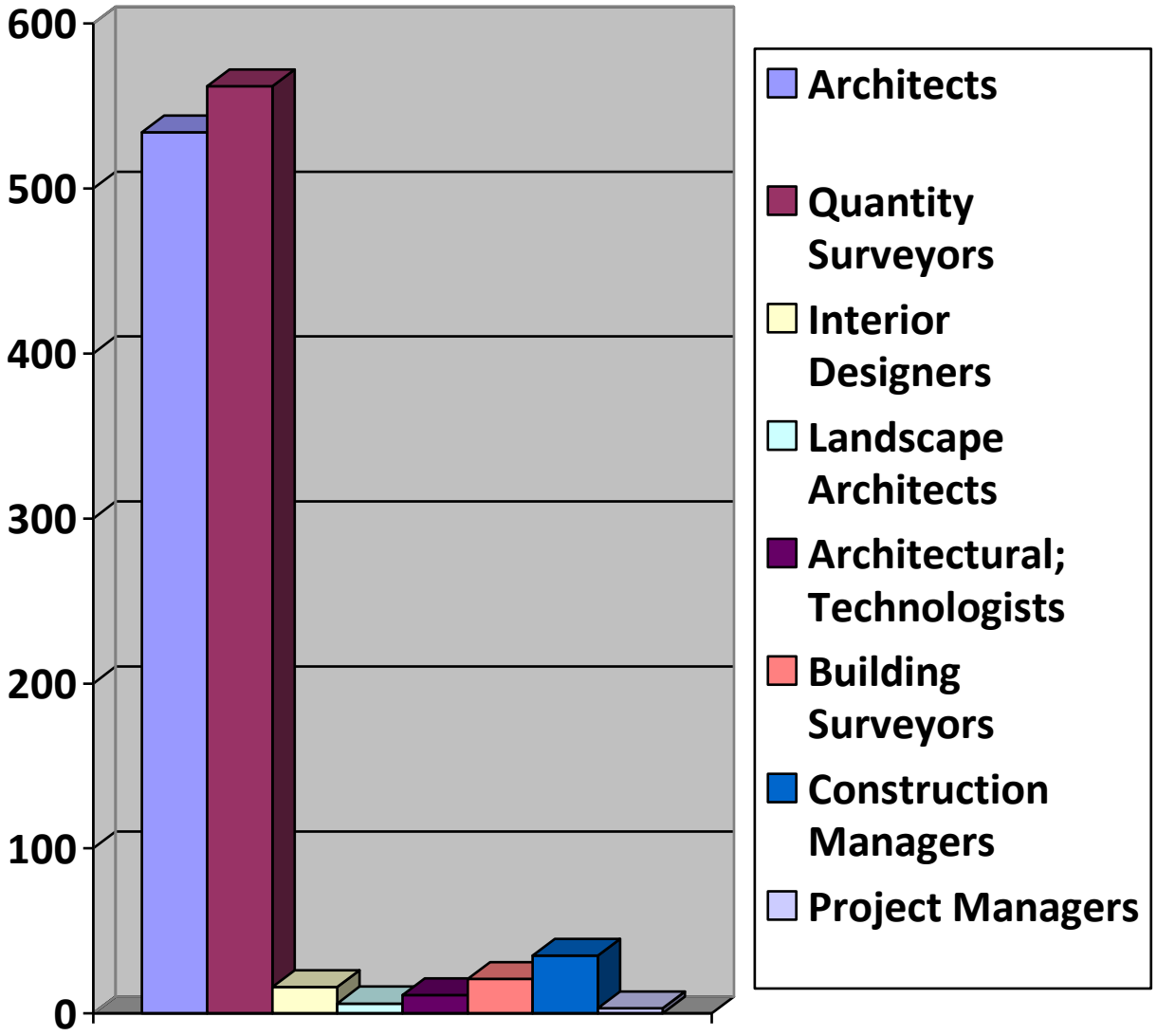
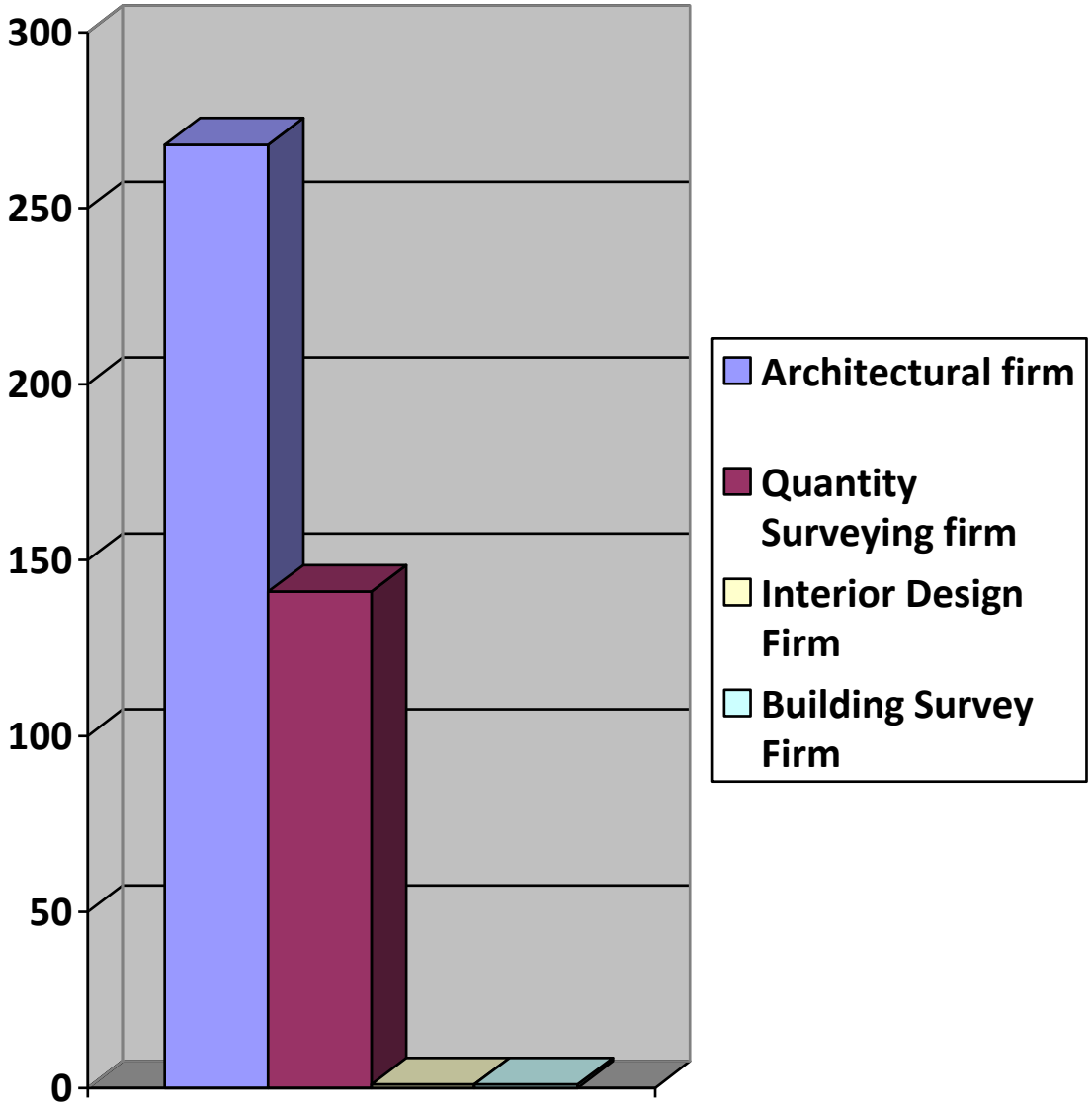


Table No. 5: Registration of firms as on 30th Sept. 2022

ARCHITECTURAL	Q/SURVEYING	BUILDING SURVEY	INTERIOR DESIGN	DELETED	TOTAL
272	149	1	1	5	418

Figure 2: Histogram showing the current registration status of firms



4.8. TRAINING UNDER ENHANCED ARTICLED PUPILAGE PROGRAMME (EAPP)

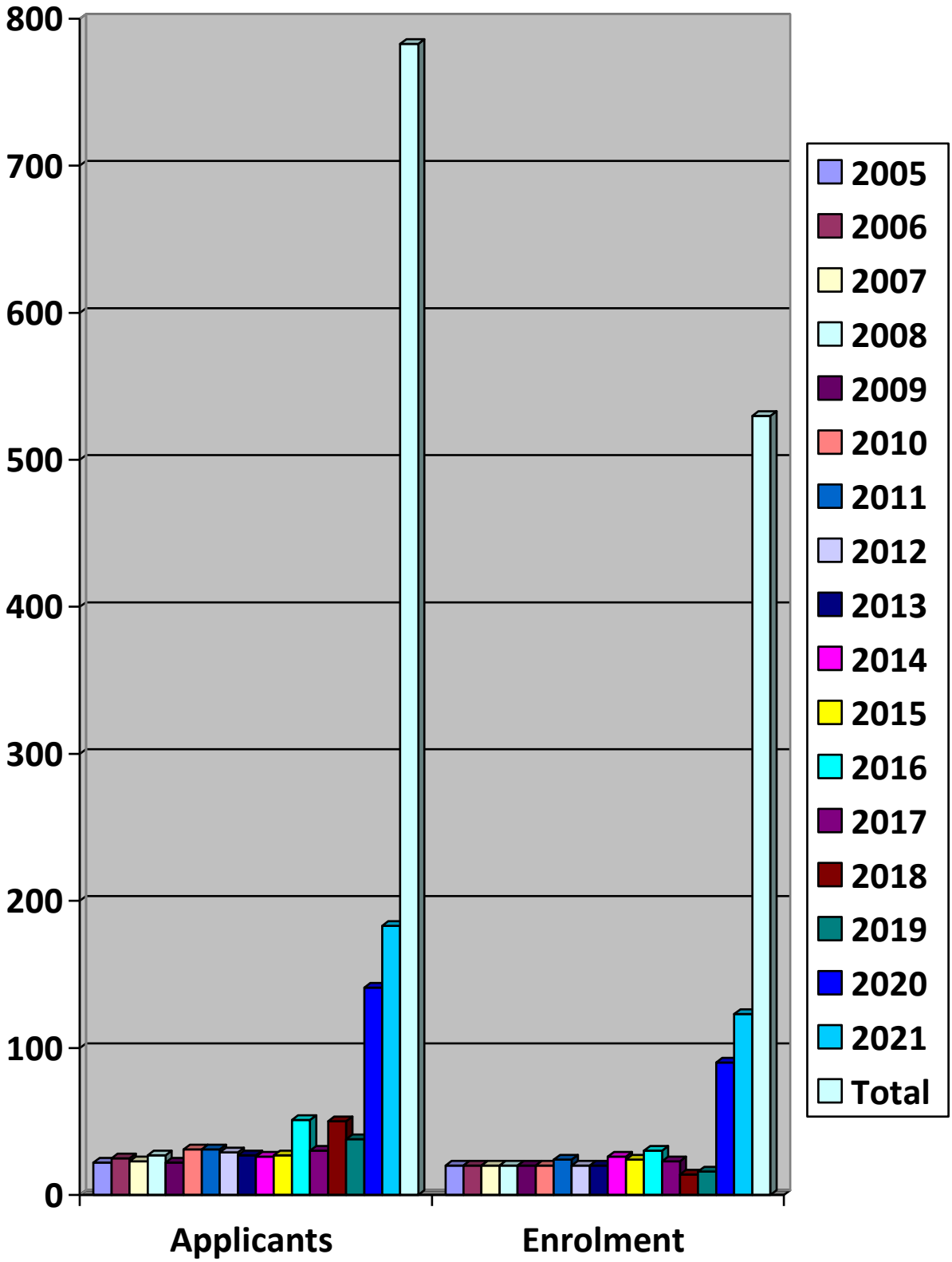
The Enhanced Articled Pupilage Programme (EAPP) was introduced by the Board in 2005 for the intention of complementing the efforts of the practice to training graduates Architects and Quantity Surveyors. This was attributed due to reduce of number of works in hand among professionals and therefore the Board intervened by financing part of cost of training and placing the graduates to firms or professionals who has works to do.

Since the start of its operation in 2005; **530** graduates have benefitted from this programme and about **350** have been registered to date. Currently, **214** graduates are going on with training

Table 6: Statistics of EAPP Candidates from 2005 to 2021

YEAR	APPLICANTS	ENROLMENT
2005	22	20
2006	25	20
2007	23	20
2008	27	20
2009	22	20
2010	31	20
2011	31	24
2012	29	20
2013	27	20
2014	26	26
2015	27	24
2016	51	30
2017	30	23
2018	29	20
2019	38	16
2020	141	90
2021	183	123
2022	235	124
TOTAL	**973**	**654**

Figure 3: Histogram Showing Statistics of EAPP Candidates from 2005 to 2022



4.9. CHALLENGES FACING REGISTRATION AND TRAINING OF INDIVIDUALS AND FIRMS

4.9.1. Available opportunities for Post-Graduation Trainings are few as compared to the needs

4.9.2. Poor supervision of graduates resulting into many graduates fails to get expected experience and therefore fail the Board's professional examinations

4.9.3. Limited number of works to handle in the construction industry which compel some of graduates to engage in other different business

4.9.4. Low level of self initiatives for some of graduates to register with the Board under the pretext that the Board's examinations procedures are complicated

4.10. CONCLUTION & RECOMMENDATIONS

4.10.1. All Graduates are encouraged register with the Board as registering with AQRB is not only a licence to practice in Tanzania but also will make them accountable with their professional works. The Board also request "senior professionals" To be the "ambassadors" to encourage more Graduates in their working places to register with the Board.

4.10.2. The Board has secured fund from the Government to finance Internship programme and therefore it encourages more graduates to join the Enhanced Articled Pupillage Programme

4.10.3. Trainers who are supervises Graduates are reminded to play their role of supervising graduates in accordance with the requirement of practices

5. ENFORCEMENT AND RESEARCH DEVELOPMENT DEPARTMENT

5.1. PURPOSE AND OBJECTIVE OF THE DEPARTMENT

The purpose and objectives of the department is to perform the Boards regulatory activities stated in the Act No. 4 of 2010. Thus the department regulates the services of Architecture, Quantity Surveying. Allied professionals offered in the Tanzania Construction Industry by registering construction projects and by conducting regular physical inspections of all construction sites in Tanzania Mainland. The department also enforces the practices of individual developers and public developers to ensure that they comply with the Act and its Bylaws. Furthermore, the department coordinates and performs all activities related to research development of the Board.

5.2. PLANNED ACTIVITIES FOR THE YEAR 2021/22

In conducting of its activities the ERD department was guided by the 2021/22 - 2025/26 Board's Strategic plan. In the FY 2021/22 The Board planned to conduct inspection of 2600 construction projects per year across the country through the zonal offices located in Five regions (Eastern zone, Northern zone, Southern Highlands zone, Lake zone and Central zone).The target number of inspections inspected were distributed according to the existed state on trend of construction activities in different regions.

Furthermore, the Board planned to register **1,000** construction projects, to conduct inspections of **360** offices of registered practicing firms and t performs Two (2) research activities.

5.3. CONSTRUCTION PROJECTS REGISTRATION (OCTOBER, 2021-SEPTEMBER, 2022)

During the FY 2021/22, the Board through its ORS/MIS registered **1,097** construction projects in 26 regions of Tanzania mainland. The registered projects are in the categories of Commercial, Commercial/Residential, Residential, Industrial, Educational, Medical and Social services buildings. Additionally he Board registered **14** government projects which are constructed at Mtumba Government city in Dodoma.

All **1,097** construction projects registered through ORS/MIS have the estimated value of **TZS 4,505,023,557,284** (The estimated project values are based on submission made by professionals during applications for project registration).up to the end of first quarter of FY 2022/23 the Board also registered **305** construction projects which have the estimated values of **TZS 503,547,764,925.**

Generally, from July, 2021 up to September, 2022 the Board registered **1,416** as per details in table 1 below.

Table 6 Registered Projects

S/No.	Registration Duration	Projects Registered	Project Values of Projects Registered
1	July,2021-June,202	1,097	TZS 4,505,023,557,284
2	July,2022-September,202	305	TZS **503,547,764,925**
3	Projects registered at Mtumba Government City	14	TZS 329,618,683,195.35
TOTAL		**1,416**	**TZS 5,338,19,005,404.35**

5.4. CONSTRUCTION PROJECTS INSPECTIONS (JULY, 2021 - SEPTEMBER, 2022)

During the year 2021/22, the Board inspected a total of **3,172** projects in 26 regions of Tanzania. The actual number of projects of inspected is above the planned projects by **574** projects. The distribution of inspected construction projects versus the targeted projects is presented in Table 2 below:-

Table 7: Projects Inspected In 2020/2021

S/NO.	ZONE OFFICES	PLANNED SITE INSPECTIONS	ACTUAL NO. OF PROJECTS INSPECTED
1	Central Zone	600	560
2	Eastern Zone	800	1,252
3	Lake Zone	400	506
4	Northern Zone	400	450
5	Southern Zone	400	404
TOTAL PROJECTS		**2,000**	**3,172**

5.4.1. **Areas Inspected in Construction Projects**

During inspection of construction projects, the Board uses the following checklist the following information to see compliance with Bylaws 2015 of the AQRB. The checklist information includes:

i) If the project inspected is registered with the board and there is a valid project registration sticker.
ii) If signboard is properly erected and the names of the supervising Architectural and Quantity Surveying firm are presented.
iii) If the project if supervised by the registered Architects and Quantity Surveyors.
iv) If Regular inspection is done by the engaged Architects and Quantity Surveyors.
v) Existence of records of site meetings.
vi) Presence of Architectural construction drawings, un-priced BoQ and Site instructions book on Site.
vii) Any other relevant information the enforcement officer will see as appropriate.

These inspection checklist items help the Board to perform monitoring of practices of registered professional and their firms. They also help to obtain a clear picture and help to perform analysis on the performance of Architects and Quantity Surveyors in delivering professional services to individual developers and public at large.

5.4.2. **Findings from Inspected Projects**

During inspection of construction projects different observations were found. The findings comprised the mixture of compliance practices and non-compliance practices by both professionals registered with the Board and developers (private and public). The compliance levels of inspected projects is presented table 6 below:

Table 8: Compliance levels of inspected projects

S/NO	ZONE OFFICES	ACTUAL NO. OF PROJECTS INSPECTED	NUMBER OF PROJECTS COMPLIED	% COMPLIANCE
1	Central Zone	560	460	**82.14%**
2	Eastern Zone	1,252	1,132	**90.42%**
3	Lake Zone	506	452	**89.33%**
4	Northern Zone	450	344	**76.44%**
5	Southern Zone	404	362	**89.60%**
TOTAL PROJECTS		**3,172**	**2,750**	**86.69%**

Up to the end of first quarter of FY 2022/23 the Board has inspected **865** construction projects out of planned 781 project inspections. Therefore, making a total of **4,037** project inspections.

The compliance levels referred include compliance in terms project registrations with the Board and issued with the stickers. On the other hand, during site inspections, some registered projects were seen not being supervised by Architects and Quantity Surveyors, these were evidenced by none existence of site meeting records, no records of Supervising Architects and Quantity Surveyors in the Site visitors book. Non-compliance practices observed during site inspections include failure by Architects to issue and place complete sets of working drawings, specifications and un-priced Bills of Quantities on site, failure to place site instruction books on site and mounting inadequate signboard.

Different measures were instituted to defaulters including notices and penalties. Continuous defaulters were prosecuted to the court. The compliance and non compliance practices are presented in the table 3 below:-

Table 9: Measures imposed to defaulters

S/NO	ZONE	SHOW CAUSE NOTICE.	INTENTIONS TO ISSUE STOP ORDERS/TO TAKE LEGAL ACTIONS	PENALTIES
1	Central Zone	6	36	10
2	Eastern Zone	113	9	11
3	Lake Zone	44	0	1
4	Northern Zone	100	27	4
5	Southern Zone	16	0	0
TOTAL		**279**	**72**	**16**

5.5. PROFESSIONAL MISCONDUCT CASES

In regulating the activities of individual Architects, Quantity Surveyors and Allied professionals and their practicing firms, the ERD also study cases of professional misconduct by registered Architects, Quantity Surveyors, allied professionals and firms and recommend corrective/ punitive measures to be taken by the Board against the offenders. During the year 2021/22 there were no records of misconduct cases presented before the Board for this year.

5.6. RESEARCH DEVELOPMENT ACTIVITIES

The Board in this year 2021/22 has completed a research study in the area of Individual professional registration process (A study on the Enhancement of Registration Process). The aim of the study was to identify the constraints which are hindering professionals to register with the board. Furthermore, the research study compared the registration process of other professional regulatory bodies of Architecture and Quantity Surveyors in East Africa, particularly Uganda and Kenya. The research findings are attached to this report as Appendix “A”.

5.7. ACHIEVEMENTS

For the year ended 2021/22 the Board through its regulatory activities recorded the following achievements. First the number of inspected projects increased compared to the last year. Second the board is continuing to improve the MIS to easier the registration process of projects, storing and analysis of inspected projects data and the findings from inspections.

Level of compliance with the Act No. 4 of 2010 is increased, both to Registered Professionals and Developers. Apart from the ongoing research on the AQRB registration process, the Board also through the CPD seminars and Professional Conferences have identified other re-searchable areas for the professional welfare and development in the Tanzania Construction industry. These researchable areas identified are centered in the Board's professional examination procedures, and customer satisfaction on professional services delivered by Architects, Quantity Surveyors and Allied Professionals.

5.8. CHALLENGES

Despite the increase of the compliance levels by both registered professionals and developers, the Board in discharging its functions has encountered the following challenges.

5.8.1. Non-compliance practices by public projects particularly projects procured under force Account.

5.8.2. Inadequate site inspection by Consultants to registered projects.

5.8.3. Rubber stamping on Architectural construction drawings for the sake of obtaining project registration stickers.

5.8.4. Cheating on scope of works during project registration.

5.8.5. Low level of awareness on the Act No.4 of 2010 by developers.

5.8.6. Collusion between Contractors, Architects and Quantity Surveyors.

5.8.7. Delays and or failure of Architects and Quantity Surveyors to make project registration payment on time.

5.8.8. The use of unregistered person who purportedly claim to be Architects in design and Supervision of construction works.

5.8.9. Difficulties in delivering notices to defaulters.

5.9. CONCLUSION

The Board is striving to provide education to private developers on the importance of engaging registered Architects and Quantity Surveyors in their projects. Penalties and legal actions are the last solution to defaulters. The board intends to establish and implement a system for monitoring assessing the conduct of registered Architects, Quantity Surveyors, allied professionals and firms.

6. FINANCE AND ADMINISTRATION DEPARTMENT

6.1. FINANCIAL PERFORMANCE FOR 2020/21

Total revenue from registration fees, annual subscription fees, sales of application forms, project registration, penalties, government subvention, workshops & seminars, office rent and Insurance commission for the year ended 30th June, 2021 amounted to **TZS 3,917.271 million** compared to **TZS 3,238.289 million** for the year ended 30th June, 2020.

During the financial year 2020/21 the Board received government subvention of TZS **905.448 million** against TZS **773.72 million**, which was received during the year 2019/20 for recurrent expenditure.

Expenditure during the year 2020/21 amounted to TZS **3,380.232 million** compared to TZS **3,242.39 million** in the year ended 30th June, 2020.

Thus, during the year 2020/21 the Board recorded a Surplus of TZS **537.039 million** against the deficit of TZS **4.097** million recorded during the year ended 30th June, 2020.

6.2. OUTSTANDING ANNUAL SUBSCRIPTION FEES

The outstanding amount of annual subscription fees during the financial year 2020/21 amounted to TZS **943.939 million** compared to TZS **1,267.33 million** in the year ended 30th June, 2020.

Table 10: The Summary of the Outstanding Amount;

S/N	CATEGORY	2020/21(TZS)	2019/20(TZS)
1	Individuals	311,606,359.00	549,158,824.00
2	Firms	632,332,985.00	718,174,206.00
	TOTAL	**943,939,344.00**	**1,267,333,030.00**

The current status of outstanding annual subscription fees as at 17.10.2022 is TZS **1,202,386,414.72**

Table 11: Comparisons of Paid and Unpaid Annual Subscription Fees in numbers

YEAR	DETAILS	PAID ANNUAL FEES	UN-PAID ANNUAL FEES	PAID (%)	UN-PAID (%)
2021	Individuals	525	779	40	60
	Firms	191	184	51	49
2022	**Individuals**	**495**	**1022**	**33**	**67**
	Firms	**170**	**246**	**41**	**59**

6.3. CHALLENGES EXPERIENCED AND EFFORT TAKEN TO SOLVE

6.3.1. Challenges

i) The finances constrain is hindering the ability of the Board to meet and implement adequately its activities as in the plan and budget; in particular: site and office inspection activities; CPD Training publicity Matters, refurbishment of offices.

ii) Insufficient human resource where by the Board has 36 staff instead of 75 staffing level (Job list) to cater for Board's operations efficiently; meanwhile the Board has no enough own source funds sufficient to hire enough contractual employees to subsidize staff who are not in the Government Payroll Systems.

6.3.2. Efforts Taken to Solve the Challenges

i) The Management is closely following up all outstanding receivables and funds from donors, for capacity building of professionals.

ii) The Board is making a follow up to PO-PMS (UTUMISHI) to maintain AQRB required staffing level of remaining 39 staff.

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KIDNEY DISEASE IN TANZANIA

Kidney disease means your kidneys are damaged and can't filter blood the way they should. The prevalence of kidney disease is on the rise worldwide with increase in number of patients on Dialysis as well. Diabetes and Hypertension remains the main risk factors for the development of kidney disease. However there are several risks including HIV, Hepatitis, Autoimmune conditions like Lupus, Pregnancy related complications, hereditary conditions, long term use of anti-pain medications.

The true prevalence of the disease in Tanzania is unknown however with the increase in dialysis patients, it is anticipated to be high. Furthermore, in specialized units of tertiary hospitals Chronic Kidney Disease (CKD) has been reported to be astronomically high and in advanced stages; prevalence of 83.7% among adult diabetic patients in Bugando Medical Centre, Mwanza (Janmohamed 2013) while at Muhimbili National Hospital in Dar es Salaam, about two-thirds are already in end stage renal disease at the time of presentation (Mngumi, 2013)

Kidney disease- a silent killer with its presentation from no symptoms to comatose condition. You can be asymptomatic and be diagnosed with kidney disease, and by the time you develop symptoms then >50% of your kidneys are damaged.

Kidney disease may develop complications like; high blood pressure, anemia (low blood count), weak bones (bone pain), nerve damage. The disease can lead to focal body swelling (facial puffiness and lower limb swelling) to generalized body swelling (anasarca). When the wastes levels are high in your blood, you may develop nausea, vomiting, difficulty in breathing and confusion.

Here are the 8 golden rules that can reduce the risk of developing kidney disease.

- Keeping fit, being active and maintaining your body weight
- Eating a healthy balanced diet
- Checking and control your blood sugar
- Checking and control your blood pressure
- Taking appropriate fluid intake. It is recommended to at least 2 liters a day in a normal climate.
- Do not smoke
- Do not take counter pills especially pain killers without a doctor's recommendation. (Diclofenac, Ibuprofen)
- Get your kidneys checked regularly if you are a high risk candidate.(If you have Diabetes, Hypertension, family history of kidney disease)

Remember:

If you are a high risk patient (Diabetic, Hypertensive) and/or with a family history of kidney disease, schedule routine clinic with your doctor and request/remind for a kidney check up. Always know your numbers - **your Blood Pressure, your sugar level, the quantity of urine)**

Diagnosis is EASY- a blood test- checking of creatinine levels and a Urine test for markers of kidney disease (albumin, Protein, blood in urine). These will show if a patient has kidney disease and once a patient is suspected then further investigations will be required such as imaging studies, kidney biopsy and will emphasize early referral to the Nephrologist (Kidney Specialist)

The majority of individuals with early stages of Kidney disease (Chronic Kidney Disease) go undiagnosed. We emphasize on everyone to check if they are at risk for kidney disease and encouraging friends or family members with any risk factors to take a simple kidney function test.

Treatment varies with the cause and Stage of kidney disease from Control of Blood Pressure, Blood Sugar, immunosuppressive, to Dialysis and Transplant.

SO LET'S GET OUR KIDNEYS CHECKED AND GET EARLY TREATMENT PLAN.

Dr. Fatma Bakshi,

Consultant Nephrologist

Assistant Professor, AKU

Aga Khan Hospital, DSM

Conservation of Architectural Heritage as an Asset in Contemporary Urban Planning

Peter Kranzhoff, Urban Planner, Hamburg / Germany (CEO Cappel + Kranzhoff GmbH)

1 Introduction: Why Preservation of Historic Buildings?

- There is a basic human need for remembrance and for anchoring in the past, which is in Europe e.g. also underlined through the Council of Europe's 2005 Faro Convention (Council of Europe Framework Convention on the Value of Cultural Heritage for Society (2005): *"Participation in Cultural Heritage is a Human Right."*
- Humanity's cultural heritage is diverse, it is unique in its entirety, and it is limited in its parts - so: protect it from damage. The preamble to the 1954 Hague Convention states, *"Damage to cultural property, belonging to any people whatsoever, means damage to the cultural heritage of all mankind, since each people makes its contribution to the culture of the world."* (UNESCO 1954 Hague Convention)

1.1 Fundamental aspects: The Value of Historic Buildings

- **Historic buildings are unique, they cannot be reproduced in their historical authenticity.**
    - Historic buildings are material witnesses of the past. They do work as material archives that, like other archives, preserve history. Historic buildings, both in comparison to each other and in their totality, are material witnesses that embody spiritual worlds, value systems, attitudes and actions of people of the past.
    - Buildings that replicate or imitate lost buildings may remind us of what was lost, but they cannot replace them in their historical dimension and credibility.
    - The authenticity of a heritage building is a necessary prerequisite for being able to interpret it today and in the future. Only if a heritage building is preserved in its historical substance can it be questioned, interpreted and reinterpreted as a historical source now and later. The historical substance that has been handed down to us is irreplaceable. Its loss means a loss of the qualities that make a monument as such.
- **Historic buildings create identity as they are part of a shared development process.**
    - Heritage buildings are among the significant sources of identity, both for the individual and for the community. They are becoming increasingly important for the dialogue between cultures. Therefore, all those with political, professional or social responsibility are called upon to safeguard the cultural-historical potential manifested in monuments or to create the necessary conditions for their appropriate use.
    - Their preservation and maintenance are in the public interest. The public interest in the preservation of historic buildings is an expression of society's cultural and historical self-understanding. Our understanding of heritage develops through public discourse: Social changes lead to a change in the understanding of heritage and require a constant reassessment and updating of the monument stock.
    - The way we use historic buildings is part of our culture today and shapes our relationship to the heritage that has been handed down to us. It is the task of preservation to pass on this heritage to subsequent generations in a state as intact as possible.

1.2 Definition of Monuments

- A distinction of the status must be made between historic buildings in general, which should be preserved as heritage, and historic buildings, which are also protected as monuments by law for the purpose of heritage preservation. But the term ‘monument’ includes more than buildings.
- A monument can be an isolated object, it can be a component of an object, and it can consist of a multiplicity of objects, as well as an urban structure or a cultural landscape.
- The term ‘monument’ thus encompasses material witnesses to human existence in the widest sense, not necessarily of artistic quality or beauty. Objects and locations associated with unpleasant memories (in Germany e.g. such as witnesses to Nazi Regime or the division of Germany, in South Africa such as connected to Apartheid, in most African countries such as connected to Colonialism) also constitute monuments that need to be preserved. In each case the determining factor is the monument’s significance as a piece of heritage rooted in history.
- Entire settlements or housing estates, village and town centres and historical industrial sites may be defined as ensembles, conservation areas or conservation zones, even though not all their constituent parts need to have monument value. This also includes historic spaces, views, skylines and town scapes and their surroundings.

1.2 Beyond Theory: Practical Benefits of Heritage Preservation

- **Preservation is an economic and employment factor.**
    - A wealth of historic buildings in a given area or location constitutes a so-called ‘soft’ location advantage in terms of attracting business.
    - Listed historic buildings or historic gardens are economically important, especially for the rapidly growing sector of cultural tourism.
    - Image promotion is an issue - and could be for Dar es Salaam in particular, which differs from other African or Asian metropolises precisely because a lot of historic buildings in the old city have been preserved by now. They have the potential to shape the atmosphere of the city and give the city a distinctive image beyond its borders.
    - Contracts related to conservation of heritage buildings benefit small and medium-sized enterprises, especially those active in the construction sector. Conventional restoration is more labor-intensive than industrial construction production.
- **Preservation enhances quality of life.**
    - Historic cities are particularly livable, since traditional buildings are often particularly well adapted to regional conditions (climate, location, habits of users).
- **Preservation is ecologically sound and saves resources.**
    - Conservation works to preserve existing structures, preserves the original building fabric, avoids the creation of construction waste and reduces land use.
    - Conservation represents a resource-efficient way of environmental development. The use of traditional building methods promotes the use of environmentally sound building materials, locally produced where possible. It also promotes the development of conservation and renovation strategies that enable repairs and save energy.

- Conservation promotes cost-conscious behavior in the sense of moving away from a throwaway society towards an ecologically sustainable repair society.

- **Preservation enhances the townscape in a distinctive way.**
  - Historic buildings use regional materials and construction techniques, reflect the specific local or regional tradition - and are therefore not interchangeable components of a cityscape.
  - Significant cities are also identified primarily by their historic buildings. Historic buildings are often the landmarks of cities.
  - Preserved heritage buildings in their entirety from different periods of origin reflect the respective special history of the place; as historic footprints, the totality of the preserved architectural heritage thus gives the place something distinctive.

2 Comprehensive Framework for the Protection of Heritage Buildings

- **Inventory and documentation as a first step**
  - As a first step, an inventory and documentation is essential to select monuments and justify public conservation interests. Therefore, material on the buildings and their historical context must be systematically collected, including the use of databases and geo-information systems.
- **Further documentation in case of interventions or destruction**
  - As every heritage building is both a witness to history and an important source for research, any alteration must be documented to ensure that its identity and usability as a source, and thus its potential to provide further insights in the future, is preserved.
  - Interventions in heritage buildings, in extreme cases their destruction, mean the loss of significant cultural values and sources. The more extensive and profound the interventions are, the more important it is to have documentation that describes the monument in a way that is appropriate to its significance. Therefore, the significance of the heritage building must have been clearly determined beforehand.
- **Legal basis for heritage protection to intervene in property rights and to control state action**
  - As a State institution, heritage protection has to have legal instruments at its disposal to protect the public's interest in the preservation of heritage buildings as monuments.
  - Heritage protection authorities must have the legal framework in place to successfully perform their duties. However, the laws must also regulate control over their work, as described below.
- **Role and power of heritage protection officers and authorities**
  - The historic preservation authorities have a duty to weigh up the public benefits of conservation and to balance public concerns for monument protection with legitimate private property interests.
  - In any specific case, the aims of preservation depend on the characteristics and values of the monument in question, taking into account all the many-layered aspects of its value and significance. Public interest in the preservation of a monument finds its limit at the point where preservation results in unreasonable demands on the private owner of a monument, or when overriding public interests come into play.

- The various types of lists and inventories of monuments should be made accessible to the public, including the statements of cultural significance. The same applies to any decisions relating to the treatment of monuments as long as personal rights remain inviolate (i.e. such as privacy and confidentiality).
- Expert judgement on historic preservation matters is the responsibility of the heritage protection authorities. They provide the necessary expertise and specialist competence. They fulfil their statutory obligations of researching, protecting, maintaining, preserving and interpreting monuments in the public interest. This requires close cooperation with all those working in planning bureaus, authorities and other disciplines and professions whose work requires careful handling of historic building structures.

- **Trained specialists both in heritage protection authorities and amongst independent architects / engineers and craftsmen**
  - Architects / engineers and craftsmen must have special knowledge of historic buildings, their special features, materials, building and construction techniques.
  - Heritage protection officers and authorities need expert knowledge of art and cultural history as well as a basic knowledge of all disciplines involved in construction, landscape gardening, town planning and restoration.
  - Both sides therefore need further education to keep up with the requirements of the job. This demands constant dialogue and cooperation, both with each other as well as with universities and other institutions.
  - Besides research in history of art and culture, scientific research into the ways traditional materials react to exposure to new technologies is gaining in importance.
- **Creating awareness**
  - The idea of heritage protection and the significance of the buildings must be explained to the public, the handling of monuments must be transparent and comprehensible.
  - Heritage protection officers have to advocate for heritage conservation while taking into account a variety of potentially conflicting attitudes and issues (private / public, financial / cultural, political / social, investors / stakeholders, norms / traditions, etc.). Heritage protection will only be supported by the population if it is expertly implemented and interpreted, and if heritage protection decisions and their reasons are clearly communicated.
  - Broad-based press and public relations work at many levels is just as much a part of the communicative process as educational work, in schools as well as in other contexts.
  - Heritage protection is networking.
- **Control of state action by civil society**
  - Judicial review must be made possible on a legal basis. An independent agency (e.g. DARCH) should both help in informing the public, training programs, etc., and criticize the state agencies in public if they do not fulfill their mandate.
- **Adequate use of the monument**
  - If the use of a monument is in harmony with its building fabric, the preservation of the monument is assured. Special attention should be paid to the original function. If this is abandoned or reduced, ethical and aesthetic aspects become more important, especially the visual qualities of the town.

These contribute to preserving and enhancing the value of our environment and are essential locational factors that should be respected and valued.

- Temporary uses aimed at the economic gain of individuals pose a threat to the preservation of the monuments in question - at the very least, they reduce their impact and thus their significance.
- The preservation and use of authentic historic building fabric as a non-renewable historical and cultural resource follows the ideal of a sustainable preservation concept that also enables future generations to deal with this cultural heritage. Current interests must not limit or prevent the future cultural significance and appreciation of a monument. The same applies to the balancing between the concerns of monument protection and political, economic and ecological interests.

- **Integration of preservation issues into planning processes at an early stage**
  - Conservation issues should be included and taken into account at an early stage in structural and development planning – regional, town planning (land development planning) including urban renewal planning.
  - 'Informal planning' and development master plans have proved valuable. They allow conservation issues to be included in planning early on, thus promoting the preservation and socially meaningful use of historic buildings and monuments as well as protection of the surrounding areas.

3 Urban Planning Strategies for the Preservation of the Architectural Heritage

3.1 Basic steps for a heritage sensitive urban planning

In African countries, cities have generally grown very rapidly since the second half of the 20th century. As a result, historic buildings from the period before that are almost exclusively concentrated in the city centers. However, it is precisely here that there is a high level of economic pressure and displacement competition due to the usual meaning and position of the center. Urban planning, which is also committed to the protection of the heritage and historically grown townscape, can react on two levels in particular:

a.) Create a heritage preservation zone.

A heritage preservation zone should be created in which the townscape is characterized by historic buildings and structures whose preservation is in the special public interest. The goal here is to preserve, maintain, and carefully develop the character of the townscape while adapting it to modern needs. The following steps are important:

- Buildings: mapping of historic buildings and ensembles, analyzing the special features that characterize the townscape here and should be protected; special consideration of the elements in the transition to the public space, e.g. in Dar: porches, arcades with their function (small economy, meeting, protection from sun and rain).
- Open spaces, public space: elements and features that are formative (if present in Dar: e.g. trees, materials, articulation of streetscape).
- Boundary of the heritage conservation zone, justified by the analysis.
- Definition of development goals and design elements:
  - Preservation goals for buildings and open spaces.
  - Definition of the adequate scale and use for future elements and buildings.

        - Basic framework for new buildings: Picking up typical building elements, building positions, including cubatures, design of the transition area to the public space, materials and colors;
        - Basic framework for the design of public space: zoning, greening, materials.
    - In public space, the city has direct design options, while historic buildings often belong to private parties and preservation can be managed primarily through a protective legal framework, persuasion and consultation, and financial / tax incentives. For new buildings, the city in turn has regulatory options that it can enforce through building permits.
    - In order to develop a district with a high quality of life, it is important to be aware of the target groups and their needs. If you follow the vision of a city for people, you will target a human scale. Thus you also particularly will value the cultural heritage and make it the benchmark for the future design of this area.

b.) Develop high-density subcenters that provide a relief function.

- The sub-centers take over a relief function with regard to services and offices, supply of the population with goods for daily needs, administrations, health care facilities, etc. for one city district at a time. For this purpose, they must be centrally located in the respective district they serve and be easily accessible for the population of the district.
- Advantages are also that e.g. traffic within the city will be distributed rather than concentrated on the city center.

3.2 Examples of cities (Gallery)

We will have a brief look at pictures of several cities that have both elements - a city center with historic buildings that form the unique, distinctive city, and sub-centers where modern high-rise buildings can dominate. The presentation will point out aspects of preservation in town planning and urban design to underline issues mentioned before.

The gallery of pictures could include some of the following cities (depending on the presenter's stock): Venice, Florence, Dubai, Frankfurt, London, Moscow, Paris, New York City, Cape Town, Windhoek, Stone Town Zanzibar, Hamburg - and at the end: a short reference to Dar es Salaam City.

4. The Dar es Salaam Master Plan as a practical example

Both issues explained are already practically foreseen in the Dar es Salaam Master Plan. For this, Dr. Lekule will present.

- The Dar es salaam master plan specifically points towards creation of a conservation zone in which the townscape is characterized by historic buildings and structures whose preservation is of special public interest. It gives planning processes and guidelines for new developments of high-density sub-centers that provide a relief function for the city center.
- The discussion and the presentation will focus on the key steps to create the heritage zone for the Dar es Salaam city.

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The Central Theme: Conservation of Buildings in Urban Areas in Africa Today

Conservation of Architectural Heritage as an Asset in Contemporary Urban Planning

By

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Abstract

The presentation will focus on instruments for the preservation of built heritage that have proven their worth in practical use. It addresses the question of why historic buildings and monuments should be preserved or even protected. In addition to the fundamental aspects such as the preservation of cultural history in general, there are also some practical advantages. Historic preservation can have economic effects, such as strengthening tourism, improve the quality of life, and enhance ecological sense of belonging. In view of urban development, historical heritage shape the townscape of cities in a way that makes them unique - cities and thus give them identities and profiles.

The paper and the presentation will show what methods are important for a solid environmental protection.. Tools necessary for object-oriented approach will be discussed and presented including creation of awareness and conviction.

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The second part of the presentation deals with the preservation of architectural heritage in the context of urban development in African countries. Cities have generally grown very rapidly since the second half of the 20th century. As a result, the historic buildings from the period before are almost exclusively concentrated in the city centers. However, it is here that there is a high level of economic pressure and displacement competition due to the grown importance of the city center. Under these circumstances, historic buildings are often replaced by new high-rise office buildings. The typical shape of the historic city center is disappearing step by step as well as the multi-functionality does. The center loses shape and diversity. An urban planning, which is also committed to the protection of the historic townscape, can react mainly on two levels a exemplified by the Dar es salam Master plan.

The Dar es salaam master plan specifically point towards creation of a conservation zone in which the townscape is characterized by historic buildings and structures whose preservation is of special public interest. It gives planning processes and guidelines for new developments of high-density sub-centers that provide a relief function for the city center. The discussion and the presentation will focus on the key steps to create the heritage zone for the Dar es Salaam city.

At the end of the presentation, there will be a brief look at several cities that have both elements - a city center with historic buildings that form the unique, distinctive city, and sub-centers where modern high-rise buildings can dominate.

Part one: Preservation of Historic Heritage

There is a basic human need for remembrance and for anchoring in the past, which is in Europe e.g. also underlined through the Council of Europe's 2005 Faro Convention (Council of Europe Framework Convention on the Value of Cultural Heritage for Society (2005): "Participation in Cultural Heritage is a Human Right." • Humanity's cultural heritage is diverse, it is unique in its entirety, and it is limited in its parts - so: protect it from damage. The preamble to the 1954 Hague Convention states, "Damage to cultural property, belonging to any people whatsoever, means damage to the cultural heritage of all mankind, since each people makes its contribution to the culture of the world." (UNESCO 1954 Hague Convention) 1.1 Fundamental aspects: The Value of Historic Buildings • Historic buildings are unique, they cannot be reproduced in their historical authenticity. o Historic buildings are material witnesses of the past. They do work as material archives that, like other archives, preserve history. Historic buildings, both in comparison to each other and in their totality, are material witnesses that embody spiritual worlds, value systems, attitudes and actions of people of the past. o Buildings that replicate or imitate lost buildings may remind us of what was lost, but they cannot replace them in their historical

dimension and credibility. o The authenticity of a heritage building is a necessary prerequisite for being able to interpret it today and in the future. Only if a heritage building is preserved in its historical substance can it be questioned, interpreted and reinterpreted as a historical source now and later. The historical substance that has been handed down to us is irreplaceable. Its loss means a loss of the qualities that make a monument as such. • Historic buildings create identity as they are part of a shared development process. o Heritage buildings are among the significant sources of identity, both for the individual and for the community. They are becoming increasingly important for the dialogue between cultures. Therefore, all those with political, professional or social responsibility are called upon to safeguard the culturalhistorical potential manifested in monuments or to create the necessary conditions for their appropriate use. o Their preservation and maintenance are in the public interest. The public interest in the preservation of historic buildings is an expression of society's cultural and historical self-understanding. Our understanding of heritage develops through public discourse: Social changes lead to a change in the understanding of heritage and require a constant reassessment and updating of the monument stock. o The way we use historic buildings is part of our culture today and shapes our relationship to the heritage that has been handed down to us. It is the task of preservation to pass on this heritage to subsequent generations in a state as intact as possible.

1.2 Definition of Monuments • A distinction of the status must be made between historic buildings in general, which should be preserved as heritage, and historic buildings, which are also protected as monuments by law for the purpose of heritage preservation. But the term 'monument' includes more than buildings. • A monument can be an isolated object, it can be a component of an object, and it can consist of a multiplicity of objects, as well as an urban structure or a cultural landscape. • The term 'monument' thus encompasses material witnesses to human existence in the widest sense, not necessarily of artistic quality or beauty. Objects and locations associated with unpleasant memories (in Germany e.g. such as witnesses to Nazi Regime or the division of Germany, in South Africa such as connected to Apartheid, in most African countries such as connected to Colonialism) also constitute monuments that need to be preserved. In each case the determining factor is the monument's significance as a piece of heritage rooted in history. • Entire settlements or housing estates, village and town centres and historical industrial sites may be defined as ensembles, conservation areas or conservation zones, even though not all their constituent parts need to have monument value. This also includes historic spaces, views, skylines and town scapes and their surroundings. 1.2 Beyond Theory: Practical Benefits of Heritage Preservation • Preservation is an economic and employment factor. o A wealth of historic buildings in a given area or location constitutes a so-called 'soft' location advantage in terms of attracting business. o Listed historic buildings or historic gardens are economically important, especially for the rapidly growing sector of cultural tourism. o Image promotion is an issue - and could be for Dar es Salaam in particular, which differs from other African or Asian metropolises precisely because a lot of historic buildings in the old city have been preserved by now. They have the potential to shape the atmosphere of the city and give the city a distinctive image beyond its borders. o Contracts related to conservation of heritage buildings benefit small and medium-sized enterprises, especially those active in the construction sector. Conventional restoration is more labor-intensive than industrial construction production. • Preservation enhances quality of life. o Historic cities are particularly livable, since traditional buildings are often particularly well adapted to regional conditions (climate, location, habits of users). • Preservation is ecologically sound and saves resources. o Conservation works to preserve existing structures, preserves the original building fabric, avoids the creation of construction waste and reduces land use. o Conservation represents a resource-efficient way of environmental development. The use of traditional building methods promotes the use of environmentally sound building materials, locally produced where possible. It also promotes the development of conservation and renovation strategies that enable repairs and save energy.

o Conservation promotes cost-conscious behavior in the sense of moving away from a throwaway society towards an ecologically sustainable repair society. • Preservation enhances the townscape in a distinctive way. o Historic buildings use regional materials and construction techniques, reflect the specific local or regional tradition - and are therefore not interchangeable components of a cityscape. o Significant cities are also identified primarily by their historic buildings. Historic buildings are often the landmarks of cities. o Preserved heritage buildings in their entirety from different periods of origin reflect the respective special history of the place; as historic footprints, the totality of the preserved architectural heritage thus gives the place something distinctive.

2 Comprehensive Framework for the Protection of Heritage Buildings • Inventory and documentation as a first step o As a first step, an inventory and documentation is essential to select monuments and justify public conservation interests. Therefore, material on the buildings and their historical context must be systematically collected, including the use of databases and geo-information systems. • Further documentation in case of interventions or destruction o As every heritage building is both a witness to history and an important source for research, any alteration must be documented to ensure that its identity and usability as a source, and thus its potential to provide further insights in the future, is preserved. o Interventions in heritage buildings, in extreme cases their destruction, mean the loss of significant cultural values and sources. The more extensive and profound the interventions are, the more important it is to have documentation that describes the monument in a way that is appropriate to its significance. Therefore, the significance of the heritage building must have been clearly determined beforehand. • Legal basis for heritage protection to intervene in property rights and to control state action o As a State institution, heritage protection has to have legal instruments at its disposal to protect

the public's interest in the preservation of heritage buildings as monuments. o Heritage protection authorities must have the legal framework in place to successfully perform their duties. However, the laws must also regulate control over their work, as described below. • Role and power of heritage protection officers and authorities o The historic preservation authorities have a duty to weigh up the public benefits of conservation and to balance public concerns for monument protection with legitimate private property interests. o In any specific case, the aims of preservation depend on the characteristics and values of the monument in question, taking into account all the manylayered aspects of its value and significance. Public interest in the preservation of a monument finds its limit at the point where preservation results in unreasonable demands on the private owner of a monument, or when overriding public interests come into play.

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o The various types of lists and inventories of monuments should be made accessible to the public, including the statements of cultural significance. The same applies to any decisions relating to the treatment of monuments as long as personal rights remain inviolate (i.e. such as privacy and confidentiality). o Expert judgement on historic preservation matters is the responsibility of the heritage protection authorities. They provide the necessary expertise and specialist competence. They fulfil their statutory obligations of researching, protecting, maintaining, preserving and interpreting monuments in the public interest. This requires close cooperation with all those working in planning bureaus, authorities and other disciplines and professions whose work requires careful handling of historic building structures. • Trained specialists both in heritage protection authorities and amongst independent architects / engineers and craftsmen o Architects / engineers and craftsmen must have special knowledge of historic buildings, their special features, materials, building and construction techniques. o Heritage protection officers and authorities need expert knowledge of art and cultural history as well as a basic knowledge of all disciplines involved in construction, landscape gardening, town planning and restoration. o Both sides therefore need further education to keep up with the requirements of the job. This demands constant dialogue and cooperation, both with each other as well as with universities and other institutions. o Besides research in history of art and culture, scientific research into the ways traditional materials react to exposure to new technologies is gaining in importance. • Creating awareness o The idea of heritage protection and the significance of the buildings must be explained to the public, the handling of monuments must be transparent and comprehensible. o Heritage protection officers have to advocate for heritage conservation while taking into account a variety of potentially conflicting attitudes and issues (private / public, financial / cultural, political / social, investors / stakeholders, norms / traditions, etc.). Heritage protection will only be supported by the population if it is expertly implemented and interpreted, and if heritage protection decisions and their reasons are clearly communicated. o Broad-based press and public relations work at many levels is just as much a part of the communicative process as educational work, in schools as well as in other contexts. o Heritage protection is networking. • Control of state action by civil society o Judicial review must be made possible on a legal basis. An independent agency (e.g. DARCH) should both help in informing the public, training programs, etc., and criticize the state agencies in public if they do not fulfill their mandate. • Adequate use of the monument o If the use of a monument is in harmony with its building fabric, the preservation of the monument is assured. Special attention should be paid to the original function. If this is abandoned or reduced, ethical and aesthetic aspects become more important, especially the visual qualities of the town.

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These contribute to preserving and enhancing the value of our environment and are essential locational factors that should be respected and valued. o Temporary uses aimed at the economic gain of individuals pose a threat to the preservation of the monuments in question - at the very least, they reduce their impact and thus their significance. o The preservation and use of authentic historic building fabric as a nonrenewable historical and cultural resource follows the ideal of a sustainable preservation concept that also enables future generations to deal with this cultural heritage. Current interests must not limit or prevent the future cultural significance and appreciation of a monument. The same applies to the balancing between the concerns of monument protection and political, economic and ecological interests. • Integration of preservation issues into planning processes at an early stage o Conservation issues should be included and taken into account at an early stage in structural and development planning – regional, town planning (land development planning) including urban renewal planning. o 'Informal planning' and development master plans have proved valuable. They allow conservation issues to be included in planning early on, thus promoting the preservation and socially meaningful use of historic buildings and monuments as well as protection of the surrounding areas.

3 Urban Planning Strategies for the Preservation of the Architectural Heritage 3.1 Basic steps for a heritage sensitive urban planning In African countries, cities have generally grown very rapidly since the second half of the 20th century. As a result, historic buildings from the period before that are almost exclusively concentrated in the city centers. However, it is precisely here that there is a high level of economic pressure and displacement competition due to the usual meaning and position of the center. Urban planning, which is also committed to the protection of the heritage and historically grown townscape, can react on two levels in particular: a.) Create a heritage preservation zone. A heritage preservation zone should be created in which the townscape is characterized by historic buildings and structures whose preservation is in the special public interest. The goal here is to preserve, maintain, and carefully develop the character of the townscape while adapting it to modern needs. The following steps are important: o Buildings: mapping of historic buildings and ensembles, analyzing the special features that characterize the townscape here and should be protected; special consideration of the

elements in the transition to the public space, e.g. in Dar: porches, arcades with their function (small economy, meeting, protection from sun and rain). o Open spaces, public space: elements and features that are formative (if present in Dar: e.g. trees, materials, articulation of streetscape). o Boundary of the heritage conservation zone, justified by the analysis. o Definition of development goals and design elements: o Preservation goals for buildings and open spaces. o Definition of the adequate scale and use for future elements and buildings.

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o Basic framework for new buildings: Picking up typical building elements, building positions, including cubatures, design of the transition area to the public space, materials and colors; o Basic framework for the design of public space: zoning, greening, materials. o In public space, the city has direct design options, while historic buildings often belong to private parties and preservation can be managed primarily through a protective legal framework, persuasion and consultation, and financial / tax incentives. For new buildings, the city in turn has regulatory options that it can enforce through building permits. o In order to develop a district with a high quality of life, it is important to be aware of the target groups and their needs. If you follow the vision of a city for people, you will target a human scale. Thus you also particularly will value the cultural heritage and make it the benchmark for the future design of this area. b.) Develop high-density subcenters that provide a relief function. o The sub-centers take over a relief function with regard to services and offices, supply of the population with goods for daily needs, administrations, health care facilities, etc. for one city district at a time. For this purpose, they must be centrally located in the respective district they serve and be easily accessible for the population of the district. o Advantages are also that e.g. traffic within the city will be distributed rather than concentrated on the city center. 3.2 Examples of cities (Gallery) We will have a brief look at pictures of several cities that have both elements - a city center with historic buildings that form the unique, distinctive city, and sub-centers where modern high-rise buildings can dominate. The presentation will point out aspects of preservation in town planning and urban design to underline issues mentioned before. The gallery of pictures could include some of the following cities (depending on the presenter's stock): Venice, Florence, Dubai, Frankfurt, London, Moscow, Paris, New York City, Cape Town, Windhoek, Stone Town Zanzibar, Hamburg - and at the end: a short reference to Dar es Salaam City.

4. The Dar es Salaam Master Plan as a practical example Both issues explained are already practically foreseen in the Dar es Salaam Master Plan. For this, Dr. Lekule will present. • The Dar es salaam master plan specifically points towards creation of a conservation zone in which the townscape is characterized by historic buildings and structures whose preservation is of special public interest. It gives planning processes and guidelines for new developments of high-density sub-centers that provide a relief function for the city center. • The discussion and the presentation will focus on the key steps to create the heritage zone for the Dar es Salaam city.

Part two: Conserving Dar es Salaam City Centre

The phenomenon on conservation of historic heritage in Dar es salaam is hinged and emanates from the following understanding of the Dar es Salaam master Plan

1. Fundamental Policy Base

The Fundamental Policy Base of the Dar es Salaam Master Plan as drawn from the constitution of the Republic of Tanzania, the land Act of the country and the Habitat III Agenda of October 2016 as indicated in text box below.

The Fundamental Policy Base of Dar es Salaam City Master Plan 2016 – 2036

The Constitution of the United Republic of Tanzania, every person is entitled to own property, and has a right to the protection of his property held in accordance with the law. (Reference: Republic of Tanzania of 1977, Clause 24.1: 1)	The Fundamental Principle of the National Land Policy of Tanzania is to ensure that land is used productively and that any such use complies with the principles of sustainable development.(Reference: The United Republic of Tanzania, the Land Act 1999 No. 4 of 1999, Part II No. 3 (1) e)

Habitat III – New Urban Agenda
By readdressing the way cities and human settlements are planned, designed, financed, developed, governed, and managed, the New Urban Agenda will help to end poverty and hunger in all its forms and dimensions, reduce inequalities, promote sustained, inclusive and sustainable economic growth, achieve gender equality and the empowerment of all women and girls, in order to fully harness their vital contribution to sustainable development, improve human health and well-being, as well as foster resilience and protect the environment.
(Reference: Habitat III-New Urban Agenda, Quito Declaration (October 2016) on Sustainable Cities and Human Settlements for all

2. The existing situation of the city

The central analysis of the existing situation of Dar es Salaam City that exposed the following planning Issues, Challenges, Constraints and Opportunities

i. Severe traffic congestion resulting from the mono-centric characteristics of the city.
ii. Scale and rapid pace of growth of the Dar es Salaam city and its sprawling nature of expansion.
iii. Fragmentation of policy and implementation responsibilities across many organizations.
iv. Demographic challenges paused by a large proportion of youth, most of them unemployed.
v. Predominance of the informal economy and informal settlements.
vi. Poor infrastructure and inadequate overcrowded social services.

In summary, the Master plan proposes the following key interventions:

i. Conservation and enhancement of the historic city.
ii. Growth, intensification and densification of the low-density areas of the city.
iii. Upgrading the existing planned city.
iv. Redeveloping the informal settlements of the city.
v. Urban development of the peri-urban areas to accommodate the portion of the future population growth that cannot find space through intensification of the existing city.

A: Vision of the Dar es Salaam city	C: Goals and Objectives	D: Strategies
"***A sustainable, competitive and people-centred city.***" **B: Mission** To prepare a master plan that will guide the growth and development of Dar es Salaam into a mega city capable of meeting the spatial and socio-economic needs and aspirations of its residents sustainably.	• To create a well-planned city with a distinctive character. • To make the best use of land in order to satisfy present and future needs of the city. • Diversification of economic growth strategies for the city. • To provide and ensure an efficient, safe, convenient, cost-effective traffic and circulation systems for the city. • To protect the natural environment and conserve the city's natural resources. • To rationally zone and designate land for various categories. • To improve line infrastructure services to adequate and affordable standards. • To preserve the culture and historic heritage of Dar es Salaam	• Conservation of the City Centre as a Historic City. • Shift and Reversal of the mono-centric development of existing and new urban centres. • Redevelopment of the existing planned and unplanned urban areas under new guidelines • Comprehensive planning of the whole city. • Establishing a Single Metropolitan Authority

3. Vision, Mission and Pillars of analysis of the Dar es Salaam City Master Plan

The master plan proposes a set of appropriate development guidelines and conditions that are realistic and conducive for Dar es Salaam City taking into consideration the social-economic environment of the country and the specific physical characteristics and social-economic context of the city.

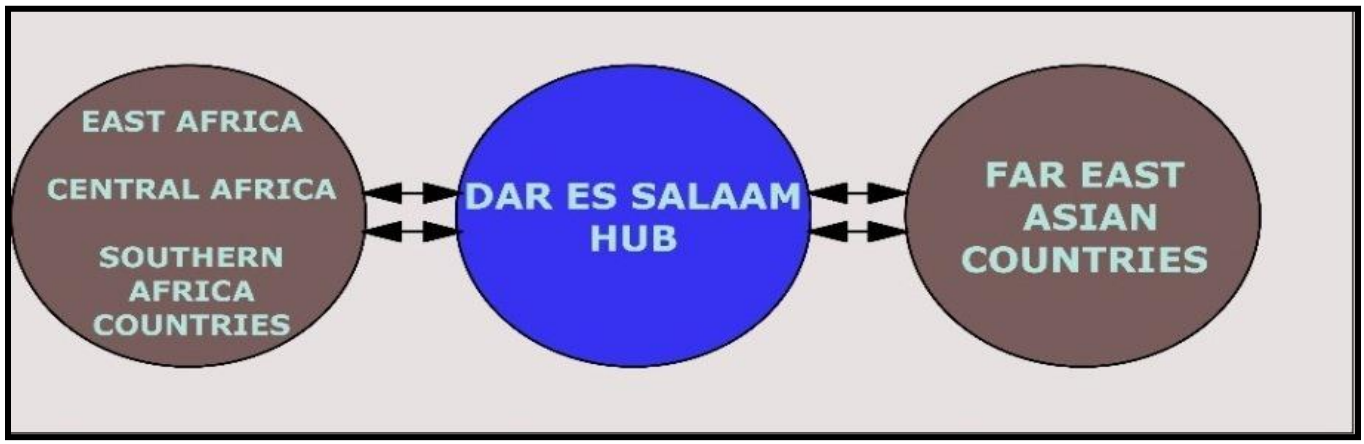
The guidelines are propelled towards realistic proposals for the new Dar es Salaam Master Plan hinge on five pillars:

i. The values and characteristics of the existing situation
ii. Normative planning theories and processes
iii. Urban design outlook – 3-D development guidelines
iv. Time – change element
v. Urban wealth – Sense of belonging.

4. The Main Goals for the Metropolitan Area - The Hub

Due to its strategic location in relation to the continental growth corridors and it's situation in one of the world's regions with the fastest demographic growth, the City will see its role strengthened in linking the economic regions of Central, Southern and Eastern Africa, the Indian Ocean islands and the Middle and the Far East in the in future as conceptually shown below.

Conceptual Representation of Dar es Salaam as a regional commercial and transportation logistics hub.



Source: Constructed by 2016-2036 Dar es Salaam City Master Plan Consortium

Adopting the moderate forecast for the future growth (population of around 13.3 million in 2036), the aim of the Master Plan is to propose a strategy to settle the 8.0 million additional population that will live in Dar es Salaam and its impact regions in the next 20 years. In order to obtain a better quality of the living habitat, the Master plan proposes to implement a decentralization strategy, which can reduce traffic congestion and facilitate the improvement of the city as an important logistic centre.

5. Issues and Key Decisions

Main Issues:

- **Strong urban polarization dictated by the mono-centrality of the city is the main cause of imbalance and malfunctioning of the city, characterised by high traffic congestion, and by a trend towards mono-functional concentration of activities in the area of the city centre and in a few adjacent areas.**

Intervention: the Master Plan proposes to launch a strategy of decentralization of central city services to new sub-centres at urban scale, to be located at selected nodal points on the existing transport corridors along Bagamoyo, Morogoro, Nyerere, Kilwa, and Mandela roads, particularly in the existing main developing hubs at Mwenge, Ubungo, Magomeni and Mbagala.
Urban sub-centres that will be located in the unplanned areas will act as potential elements that can catalise a process of urban upgrading and redevelopment of the informal settlements. Localization of new urban services and common areas for the communities will facilitate progressive inclusion of these zones as integral components of the city as shown in Map 1.

- **Issue: Threats to the historic City Centre with significant cultural heritage is progressively being destroyed by inappropriate interventions, such as demolition of historical buildings and erection of high-rise buildings. Therefore, there is need for introducing a proper preservation and sustainable development strategy.**

Intervention: The Master plan identifies the need of preservation and maintenance of cultural heritage, regulation of building activities and reduction of traffic congestion to improve quality of the city Centre. Preserving, maintaining and rehabilitating architectural and urban heritage should be a base-element of the new city center.
Planning themes for the future City Centre are:

i. Conservation of the cultural heritage and rehabilitation of the Waterfront;

ii. A balance between mixed commercial and residential uses;
iii. Urban open space and the green city;
iv. High-quality commerce, public and cultural facilities;
v. Sustainable mobility and creation of pedestrian areas and streets

- Issue: Decay of informal settlements characterised by low or poor quality housing, lack of inadequate infrastructure, poor road networks and inadequate services;

Intervention: The Master plan identifies three categories of the informal city and proposes appropriate redevelopment and renewal strategies for each of them: i. Areas in which to establish and implement systematic policies for improvement of services and for residential redevelopment based on new urban design tools. The scope of policies in these areas is to gradually raise the overall quality, by reformulating them to the level of the low-density, formal city, and reorganization of the public open spaces.

- Issue: Traffic congestion and absence of road hierarchy;

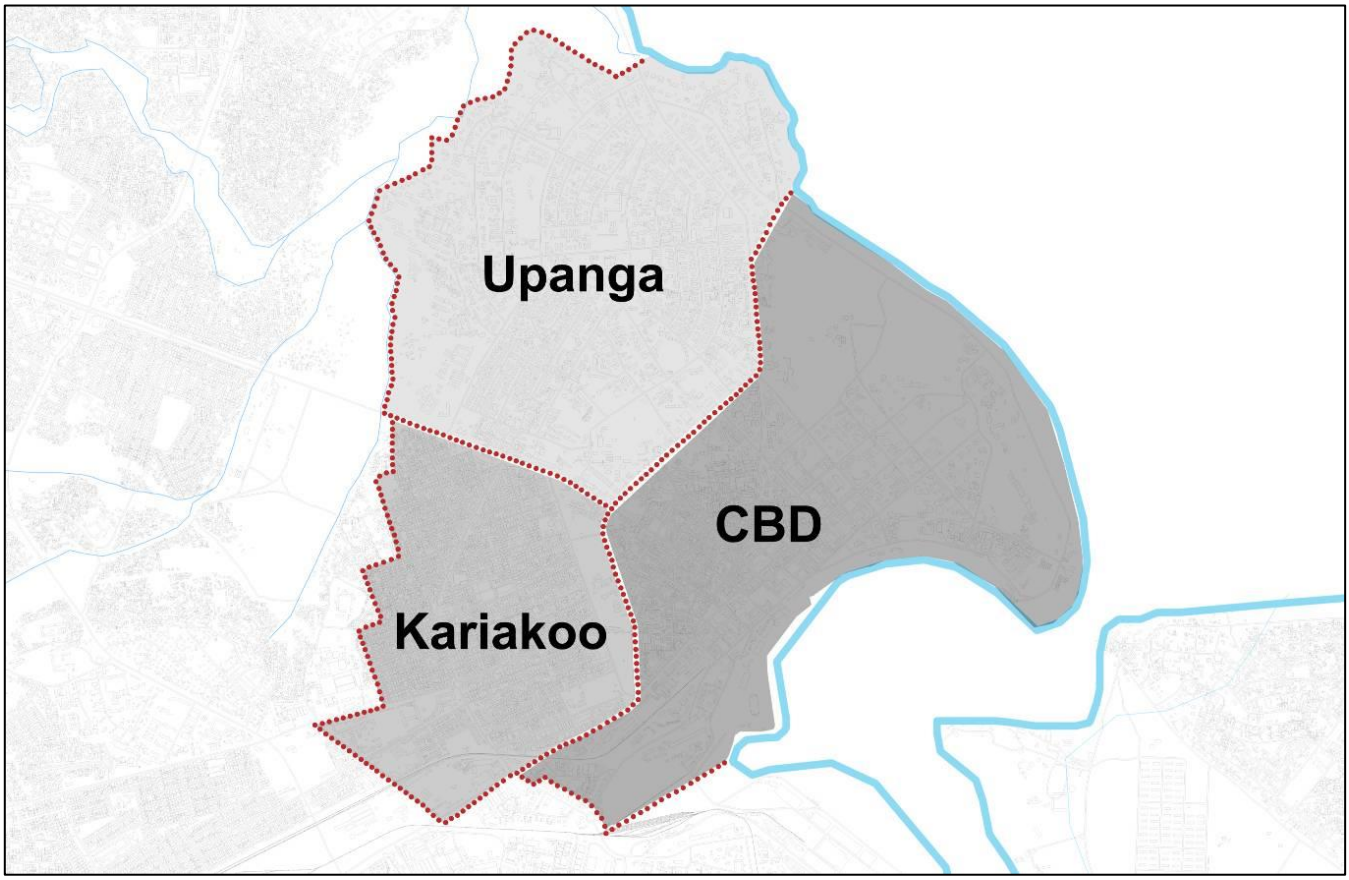
Intervention: A new road system based on construction of two new ring roads of a concentric pattern of main roads and new bridges across rivers to enhance permeability across adjacent settlements. The new ring roads will provide access to the harbour, thus relieving Mandela Road of heavy-duty trucks. At present, heavy duty trucks use it to access the harbour leading to severe congestion on the road. The concentric pattern of main roads will facilitate redistribution of traffic away from the radial roads while enhanced permeability across adjoining settlements will provide relief to the traffic congestion on the main roads, leaving it to then carry through traffic. Figure 4 below shows the city's mono-centric travel pattern.

Restructurings the city center

The Dar es Salaam City Centre is composed of three different urbanised parts, covering about 874,000 hectares (Ha). Each part: the Inner Centre (Central

Business District- CBD), Upanga and Kariakoo arose from a specific period of the historical development of the city (Figure 1.1)

Figure 0.1: A snapshot of a section of the Dar es Salaam City Centre



Source: Prepared by 2016 – 2036 DCMP Consortium

The buildings in the CBD area are rich in value. They date back to different periods in history; for example, the Arab and German periods.

i. Upanga gives one the feeling of being in a garden city.
ii. Kariakoo offers a collage of regular grid dating from the 1920s, along with even older Swahili houses.
iii. Dar es Salaam has a tropical coastal climate and a flat topography with an altitude gap of 25 metres.

Historical Background - Urban Development and Previous

Plans for the Central Area

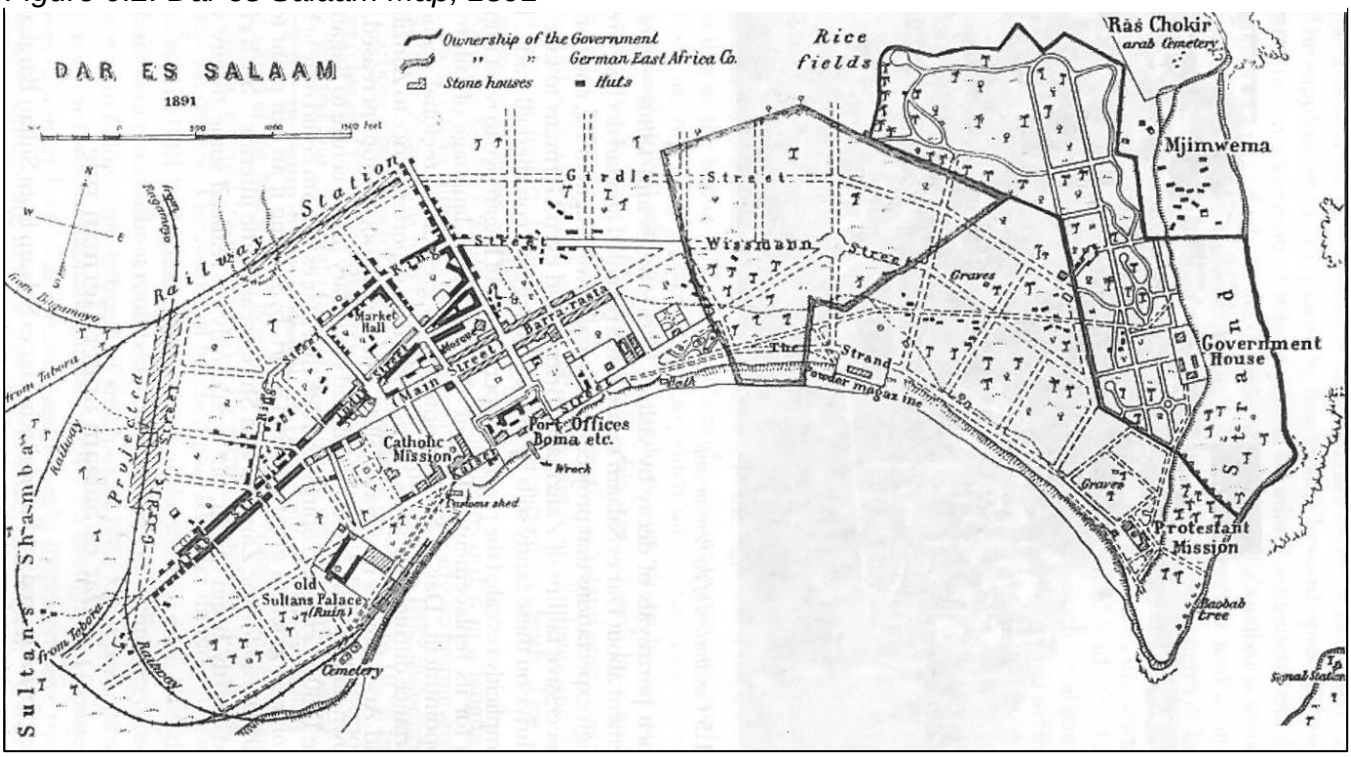
The history of Dar es Salaam city dates back to when the first Arabs, led by Sultan Majid bin Said, arrived and settled along the coast in a fishing village called Mzizima. Since then, Dar es Salaam has grown from a little fishing village into a prominent urban centre in East Africa. Its planning began in the 1860s, when Sultan Majid decided under the influence of European diplomats, to develop a new harbour along the East African coast. The city's first layout plan was completed in 1862, and the first buildings were laid out between 1865 and 1866.
Today, the urban environment of Dar es Salaam city is a product of four main administrative periods: the Arab Period (1860-1890), the German Period (1890-1916), the British Period (1916-1960) and the Post-Independence Period (1960-to date). It is assumed that the first two periods could be combined into a 'first generation' period of the city's growth.

The Arab and German periods

When founded at the end of the 19th Century, Dar es Salaam was characterised by the Sultan's palace and his plantations, with natives living in single houses and huts built along the main footpath.
With the Germans settling down and the transfer of port activities from Bagamoyo to Dar es Salaam, the new harbour became the main entrance to the capital of the East African German colony.

The urban morphology designed by the German authorities was a rigid grid of roads starting from the harbour front. This new infrastructure, together with the

Figure 0.2: Dar es Salaam Map, 1891



construction of the first ring (the present-day Indira Gandhi Street and Makunganya Street), shaped the future town.

Source: "Deutsche Kolonialblatt, 15th August 1891" in "Dar es Salaam History from an Emerging African Metropolis."

Main features:

- On the west side of the present day Samora Avenue, the Indian communities built their trade businesses.
- Along the waterfront, the German authorities placed the main official buildings: the City Hall, the main Post Office, the White Fathers Building, and the two religious buildings: Azania Front Lutheran Church (1901) and St. Joseph's Cathedral (1902) (Figure 1.2).

- The native inhabitants were kept out of the European and Asian areas through a system of strong segregation.
- "…one of the most valuable contributions to the growing metropolis was the park, started by the German administration as public experimental gardens and included not only the Botanical Gardens but all the present Government

House grounds."[1]

Dar es Salaam grew rapidly. In the German Period, two other detached semi-arch roads were introduced, defining the urban shape of the city centre.

In the European compound, two different building typologies were erected:

i. Houses incorporating Swahili architectural elements; and
ii. Houses based upon European classical styles.

The British Period

'The second generation' of the City's growth, involved the British Administration period (1916-1960), distinguished by two different phases:

I. The time-span between the two World Wars; and
II. The phase from World War II to Independence.

The Period between the Two World Wars

In the first period, the British administration followed the path designed by the German authorities. They continued creating open spaces, forming a green belt all around the city, and using these urban elements to separate the Indian zones from the African ones. To achieve this goal and to accommodate the native population, the new administration evacuated the Africans to the new town of Ilala.

The green areas of the Botanical Garden and the Government House grounds were extended. Development areas included were the "tidal swamps between Ras Chokir and Upanga, which was drained and playing fields laid out around a new club building, now known as Gymkhana Club."[2] With the introduction of the green belt, the city centre limit grew stronger. The main roads [Samora Avenue, Sokoine Drive, Zanaki Street and the extra-urban roads: Morogoro Road and Bagamoyo Road (now Ali Hassan Mwinyi Road)] confirmed the urban structure.

After Independence

The land use introduced by the Master plan of 1949 was in some places adopted by the newly independent government; for example, along the modern ring (Bibi Titi) and Azikiwe Street, creating new landmarks for the new capital of Tanzania. Some parts of the city changed function; the area formerly occupied by the Europeans became the new area for government buildings and international

1Sir Alexander Gibb, "A Plan for Dar es Salaam", 1949
2Sir Alexander Gibb, "A Plan for Dar es Salaam", 1949

agencies. New buildings changed the previous landscape. Dar es Salaam authorities called world famous architects to design new landmarks for the central area: the market in Kariakoo (Amuli Arch. 1972-74), the Public Library (Almeida Arch. 1965-67), the National Museum (French and Hastings arch. 1967-71), the Bank of Tanzania (Shah Arch. 1965) and others.

The planners concentrated on creating a capital city for a modern country. They paid more attention to the new government location than to the city centre as a whole. Along the Mnazi Mmoja road, a high concentration of future government and parastatal offices was proposed, connecting the existing government area to the waterfront. The waterfront was confirmed as a significant civic place with new government buildings, and private and commercial buildings, establishing a city mall along the Bayfront.

Present Situation

A typological and morphological analysis was carried out to understand the city centre. The present use of the ground floor of each building in the formal CBD was checked. CBD's urban space was maintained until the post-independence period when old buildings began to be substituted. The skyline of the historical city was dominated by the most important religious buildings – on the seafront, the two European churches were the main landmarks, while mosques marked other parts of the urban agglomeration. These elements were located along the main roads, controlling the urban structure since Dar es Salaam was founded. Along these roads (Samora Avenue, Indira Gandhi Street, Jamuhri Street, Morogoro Road, Sokoine Drive), there are to date religious buildings alongside important public constructions, many of them are historical constructions.

Within the city's central area remain typical commercial Indian buildings of two to three floors. Plain facades characterise these buildings often decorated to reflect the owner's position in society. A distinguishing feature of the town-planning design of the last century is the way building corners were designed at each road intersection. Various examples demonstrate how important the role of architecture was in that period.

The urban structure is still marked with numerous historic buildings coming from the German period. Nowadays, these buildings are being sacrificed for the demands of commercial, office and residential spaces (see figure 2.1). Old and structurally inadequate buildings are being demolished to make way for new and contemporary ones, better designed for vertical expansion. (CFR cap. 2.1). This leads to a sad loss of many of the city's historical features (see figure 2.2).

These developments do not take into consideration the size of the plot, resulting in rather tall and narrow looking buildings. These towering structures have shrunk the previously adequately sized streets to narrow and dark alleys. The proportion of building heights to the width of the street are out of scale, thus marring the original landscape. At present, the originally horizontal town is transforming into a vertical one. In some parts of the CBD, the progress has completely changed the city's atmosphere. The original relationship between built-up areas and open spaces is still present in the proximity of the Morogoro Road, and Mosque Road. Instead, along Samora Road, Jamhuri Street, Zanaki Street and Azikiwe Street, entire blocks are changing due to the introduction of the skyscrapers.

The lack of control of building activity and the insufficient distance between high rise buildings alter the real character of the city. Even in the Master plan of 1949, the central area was recognised as a special "business area (that) has an atmosphere which would be a pity to destroy; the old Arab influence, in conjunction with some of the balconised Indian buildings, are extremely attractive and there are some very pleasant street groupings".

Like many other African urban central areas, Dar es Salaam city is characterised by the commercial use of the ground floors of the urban zone. The administrative and financial districts are at the seafront and in the eastern part of the town. Not only the CBD has changed, but Kariakoo and Upanga areas are also transforming. Modern high rise buildings are replacing the old Swahili houses. "High rise with low rise development in Kariakoo"3.

3NgulumaHuba, "Housing Themselves", 2003

Figure 0.1: Buildings in the Dar es Salaam City CBD

Source: Sutton J.E.G, Editor, 1970, Dar es Salaam. City Port and Region: Tanzania Notes and Records

Figure 0.2: Swahili house with an adjacent high modern building in Kariakoo area.

Source: Sutton J.E.G, Editor, 1970, Dar es Salaam. City Port and Region: Tanzania Notes and Records

Sites and Buildings of Historical Importance

Dar es Salaam City Centre is infused with its history and culture. The most interesting sites and buildings are:

i. Library 1965/67
ii. Traditional house in Upanga Road
iii. Dar Primary School
iv. St. Alban Church 1934
v. Laxminarayad Temple 1927
vi. Swaminarayan Temple
vii. Iceland Paan House
viii. Dar institute 1958/61
ix. National Museum 1967/71
x. British Council library
xi. Ministry of Works
xii. IPS buildings

xiii. Tanzania Postal Bank
xiv. Census House
xv. Old buildings in Mkwepu Street
xvi. Ngazija Mosque
xvii. Crown bureau de change
xviii. Shia Hnasheri Mosque
xix. Cosy Cafè
xx. Internal Revenue Office
xxi. Askari Monument
xxii. New Africa Hotel 1906 (Kaiserhof) wholly rebuilt in 1967
xxiii. Lutheran Church 1901
xxiv. Forodhani Hotel (1911 the Club)
xxv. Kilimanjaro hotel 1965, built by Zevet Israeli engineers
xxvi. Ministry of Foreign Affairs
xxvii. Old Yacht Club 1933
xxviii. NBC old German Post Office
xxix. International Motors building
xxx. Old Post Office 1891
xxxi. Attman House 1882
xxxii. White Fathers building 1882 (see figure 2.8)
xxxiii. St. Joseph's Cathedral 1902 (see figure 2.7)
xxxiv. Post Office
xxxv. City Hall 1870
xxxvi. United Nations
xxxvii. Bonora Mosque 1850-1900
xxxviii. Classical buildings
xxxix. Town Jamat Khana Mosque 1935
xl. Arab Mosque 1891
xli. Memou Mosque 1800-1850
xlii. New Zahir restaurant
xliii. Classical Italian buildings
xliv. Sunni Mosque
xlv. Clock Tower 1961
xlvi. German corner building
xlvii. Railway Station 1905
xlviii. Bus Station
xlix. Kariakoo Market 1972/74
l. Bank of Tanzania 1965
li. Shashi House 1932
lii. Ocean Road Hospital 1897
liii. State House 1903 by architect Sinclair
liv. War Memorial

lv. Mnazi Mmoja Hospital 1896 (first part) additional wing in 1924
lvi. Dar es Salaam Institute of Technology
lvii. Light Corner House (arch. Almeida)
lviii. Mayai House (on Samora Ave – old German Building Housing TRA offices)
lix. Old German buildings on Kivukoni Front (Mappings & Survey Buildings)
lx. Court of Appeal (Kivukoni Front).

Figure 0.3: St. Joseph Roman Catholic Cathedral

Source: Field Study, 2012

Figure 0.4: White Fathers Building

Source: Sutton J.E.G, Editor, 1970, Dar es Salaam. City Port and Region: Tanzania Notes and Records

Transport and Traffic

Transport and Traffic

Dar es Salaam city centre is Tanzania's main economic attraction. Every day, thousands of people travel to the formal CBD (see Table 2.4), creating traffic jams from Kariakoo and Upanga (see figure 2.9). Recently, a research conducted by JICA in the "Strategic Planning Framework for Traffic Improvement in CBD" reported the following: "major streets – roads in the CBD are all oversaturated by vehicular traffic to – from CBD[4].

The total road capacity is estimated at 128 thousand vehicles, while the survey reveals 157 thousand vehicles travelling within the city centre. This vast amount of vehicles is in response to the growing needs of individual mobility, quoted as being a hesitation "to walk even a short distance". No improvements have been made to the historical road network. The present and future growth of motor vehicle use and the local public transport *Dala Dala* (old, small, not roadworthy buses, scarcely respecting traffic laws) create a dangerous situation. Furthermore, traffic conditions are leading to a state of air pollution that has "exceeded the pollution limit set in the WHO guidelines".

4 JICA, *Strategic Planning Framework for Traffic Improvement in CBD*, 2012

Research findings state that all vehicles are almost fully occupied; the city centre traffic is caused by people needing to go to work (45 per cent) or for other business matters (33 per cent). There are no cycle paths, and pedestrian sidewalks are often inadequate or absent.

Figure 0.5: Traffic congestion in the proximity of the Askari Monument

Source: Field Study, 2012

1. Planning Themes

2. The old city and the sea – conservation of the cultural heritage

The main attractions of the city are the waterfront and the old city (see figure 2.110). These parts are suffering from a lack of restoration and upgrading. The assault of traffic has impeded proper use of the CBD. The waterfront should be restored as the main entrance of Dar es Salaam, as it was during the German colonial period. Historical buildings should be valued as necessary. New urban design with pedestrian areas and sidewalks should be created alongside carefully restored historical buildings

The waterfront will be extended towards the old harbour warehouses. Cultural places and commercial areas, able to attract the local population and tourists (Area 11) could be housed there. The new marina could increase the growth of

tourism. Furthermore, a mixed function area could be created close by to house offices, hotels and luxury apartments (Areas 8-9-10).

The pedestrian area of the waterfront will be connected to a new pedestrian area from Morogoro Road (reserved for DART) to Aggrey Street – a CBD street full of cultural and religious buildings. People with disabilities, the elderly and children, need special attention. These are citizens that require specialised design, paying attention to easy accessibility, mobility and safety-enhancement features. They should feel included rather than excluded from the city centre. Introduction of ramps instead of steps, tabular speed bumps enabling crossing from one side of the street to the other, wide pedestrian walkways with safety buffers from moving traffic and street seats for resting, are all necessary for creating an enclosure urban landscape.

Preserving, maintaining and renovating architectural and urban heritage should form the basis of the new CBD. In general, a city centre's CBD is a conservation area, and each building requires specific attention:

i. **Building Renovation;**
ii. **Restoration Type A; and**
iii. **Restoration Type B.**

The Western District should be upgraded around Bibi Titi Mohamed Road and Libya Street. Urban renewal plans improving the quality of buildings, and creating a harmonious urban landscape, must also include a new traffic system (Area 3). Listed buildings in the CBD must be preserved according to the existing laws ("Principles and guidelines for the conservation and management of cultural heritage resources in Tanzania", 2008).

The Master plan contains a file for each building of importance.[5] The file indicates specific procedures for the building's restoration and enhancement.

[5]See "CBD –Cataloging Buildings"

ZANZIBAR & HERITAGE – APPROACH TO CONDITIONAL SURVEYS

Topic: Preserving the Built Heritage

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Abstract:

Zanzibar Stone town is a well renowned UNESCO World Heritage Site that provides exceptional architecture and urban structures coupled with a uniquely infused cultural essence. The conservation status of buildings in Zanzibar Stone Town remains a challenge due to lack of maintenance and neglect of buildings over the years. Furthermore, the island's difficult climate and problems inherent in building materials and technology pose a greater challenge. With this in mind preserving architecture is of key significance and that is what inspired the team to get involved and take action.
The House of Wonders conditional survey is the case project the team took part in together with conservation and structural experts to determine the emergency stabilising measures that can be immediately taken to prevent further collapse of the building. Detailed photographic information was collected and the diverse team of experts provided in-depth knowledge and innovative approaches.
Previous investigations include 3D photogrammetry, review of historic literature as well as accurate drawings. The combined information set precedence for the main conditional survey that the firm actively executed together with conservation experts for The People's Palace Museum originally called the Sultan's Palace.
The approach is a detailed condition survey at regular intervals on all items of cultural property, recording visible defects factually and proposing effective solutions with minimum intervention to the building surfaces and its boundaries. As an output the photographic analysis and evidence, drawings and material inspections done resulted in an inspection report that would form the basis for further restoration activities in the buildings paving the way for future building restoration.

Keywords: *heritage, House of Wonders, Zanzibar, conditional survey, Peoples Palace Museum, conservation, restoration, architecture, 3D Photogrammetry*

Introduction

Zanzibar Stone Town is a well renowned UNESCO World Heritage site that has numerous historic sites that exemplify architectural and urban history that dates back to the 1800s. These monuments over the years have been exposed to water infiltration due to the absence of or leaking roofs, to weather agents within the saline atmospheric climate coupled with ingress of underground water. As a result, the buildings exhibit signs of deterioration over the years which is further accelerated by the minimal to no maintenance regime that takes place and the introduction of "modern" building materials to correct defects that do not comply with the existing building finishes.

Fortunately, Zanzibar Stone Town is protected under the "Ancient Monuments Act" of 1984 and this legal framework protects individual buildings and sites as gazetted. This handed the responsibility for monitoring and management of these monuments to the jurisdiction of the

Department of Museums and Antiquity in Zanzibar. The town and Country Planning Act of 1955 further provided clauses to protect historically important buildings which greatly improved the protection of these monuments. As preserving heritage remained as a focal discussion in 2000 the Zanzibar Stone Town was deemed as World Heritage Property which further inscribed Stone Town under three major criterions (ii) an outstanding material manifestation of cultural fusion and harmonization, (ii) an exceptional manner by the architecture and urban structure of the Stone Town, due to centuries of intense seaborne trading activity between Asia and Africa and (iv) of great symbolic importance in the suppression of slavery, since it was one of the main slave-trading ports in East Africa and also the base from which its opponents, such as David Livingstone, conducted campaigns. As a result, it became common understanding that the restoration process and any other intervention should not affect the universal outstanding value and attributes of any property.

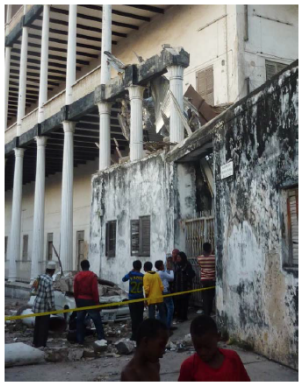
With this understanding two monuments that met this criterion will be used as a case study for this paper where significant deterioration and clear need of restoration was emanant. The first building is the House of Wonders also known as the Beit-el-Ajaib that was built as a ceremonial palace to celebrate modernity in the 1880s by the Sultan Barghash bin Sultan bin Sayyed (1870-1880) who was the son of Seyyid Said and was the third ruler to reign Unguja and Pemba. It was designed by a Scottish marine engineer who interpreted the wishes of the Sultan in construction of what was to be a ceremonial centre.

Source: https://zancama.org/beit-al-ajaib-1883-2020
(Ministry of Tourism and Heritage Zanzibar, 2021, #) Explanatory Report

The second building is the People's Palace Museum originally called the Sultan's Palace that was built in the late 1890s for members of the Sultan's family. It is one of the main historical buildings in Stone town comprising 3 storeys with merlon decorated white walls located between the House of Wonders and the Old dispensary. Items still present in the building include writings, clothes, daily life accessories with several furniture items and other belongings belonging to the Sultan's family during the 19th century at the museum.

Source: (Architectural Pioneering Consultants et al., 2022, #)

Both monumental buildings over the years have deteriorated due to a lack of frequent maintenance and harsh weather leading to loss of structural integrity and in the case of the House of Wonder, disaster struck more than once. In 2012, a large corner of the building collapsed, in 2015 strong winds caused the partial collapse of the roof and most recently in 2020 when a section of the building partially collapsed.



2012

2015

2020

Source: (Ministry of Tourism and Heritage Zanzibar, 2021, #) Explanatory Report

For the palace museum, the majority of the deterioration has been on the building surfaces with visible decay and structural integrity of the members compromised that props have been put in place to keep the building from collapsing. The series of images below show the extent of deterioration over the years from documentation collected.

2015

2019

2022

Source: (Architectural Pioneering Consultants et al., 2022, #) (Department of Museums and Antiquities, Zanzibar by Pierre Blanchard for World Monuments Fund, 2015)

As a result and in urgency particularly for the House of Wonders, a collaborative engagement with UNESCO, the Government of Zanzibar, United Republic of Tanzania and several other states and organisations was immediately set up to determine the extent of the damage and what can be done. With support from UNESCO, in partnership with the World Monuments Fund and the Global Heritage Fund three technical missions were given the task to assess the damage at the House of Wonders and establish a road map towards rehabilitation.

Survey guiding principles

ICOMOS (International Council of Monuments and Sites) that works for the conservation and protection of cultural heritage places provides a charter that was used as a guide to determine the methodology and technique (ICOMOS, 2011). The team decided their approach and goal towards restoration will be based on the principle that **"Deteriorated structures whenever possible should be repaired rather than replaced"** *(ICOMOS Charter – Principles for the Analysis, Conservation and Structural restoration of Architectural heritage 2003)*.

For the purpose of achieving that, the team based their diagnosis of the structures on non-destructive qualitative and quantitative approaches. The qualitative approach was mainly based on direct observation of the structural damages, material decay and reviewing available documentations on the structures. While the quantitative approach was focusing on tests, monitoring and structural analysis of the same.

Case Study 1: Beit Al Ajaib – House of Wonders

Using the case study – House of Wonders as precedence, the approach involved carrying out a conditional survey to analyse and determine the extent of the damage in order to propose feasible solutions in line with the remedial measures. This focused extensively on the original construction principles and technology used under the elements of walling, balconies, roofing and finishes.

Source: (Ministry of Tourism and Heritage Zanzibar, 2021, #) Explanatory Report

Survey methodology and results

The conditional survey was structured into three interrelated missions that were categorised as (i) Laser scanning and Digital photogrammetry survey carried out by experts from the University of Cape Town (Zamani Project) (ii) On-site assessment of the structural damages carried out by a team of architects and structural engineers and (iii) Advisory in nature to give an assessment of the state of conservation of the entire World Heritage property in order to recommend a road map for emergency safeguarding measures and long term conservation management needs. This was carried out by representatives of the UNESCO World Heritage Centre and the Advisory Bodies to the World Heritage Committee: ICOMOS and ICCROM.

(i) Laser scanning and 3D photogrammetry survey

Led by Prof. Heinz Ruther, this 3D data collection mission was carried out by a group of experts from the University of Cape Town (South Africa) in association with the Zamani Project from January 2021 to February 2021. The team built-up on previous results from a survey undertaken by Zamani Project in August 2019 and established a new virtual model.

The team accurately recorded the pre- and post- collapse geometry of the walls, columns and other key physical features of the building.
As a result, they produced a digital 3D model, detailed sections and floor plans of the building forming a basis for rehabilitation planning.

[1] Rubble stone walling with degressive widths from approx 150-165 cm on ground floor to approx. 110cm on 2nd floor level.

[2] Traditional lime plaster, floors clad in marble tiles. Windows and doors executed in local hardwood with variations in their execution and bespoke wood carving.

[3] Outer ring adjacent to the wall structures (combination of cast iron columns and RC slabs/beams as well as timber columns and platform structures.

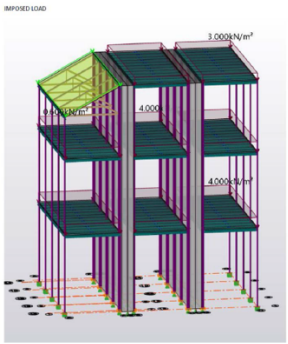
[4] Flat roof portions exist and articulated roof structures (with a timber truss system) cladded.

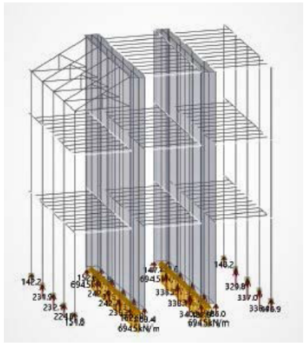
Observations:
A report prepared concluded that the deformations due to the collapse of the building are limited to certain areas. The established documentation can be used to monitor the status of the building in order to detect and quantify any changes and/or deformations in the building structures during rehabilitation

(ii) On site assessment of the structural damage

An in-depth assessment of the building was carried out by a team of architects and structural engineers.
In November 2020, Ingenuity Works carried out a geotechnical investigation for the regeneration of the House of Wonders. The team drilled six boreholes of varying depths around the building and collected samples that were taken to the laboratory to test the degree of corrosiveness due to the presence of chloride and sulphates in the area. They also performed an in-situ Standard Penetration Test to determine the soil bearing capacity.

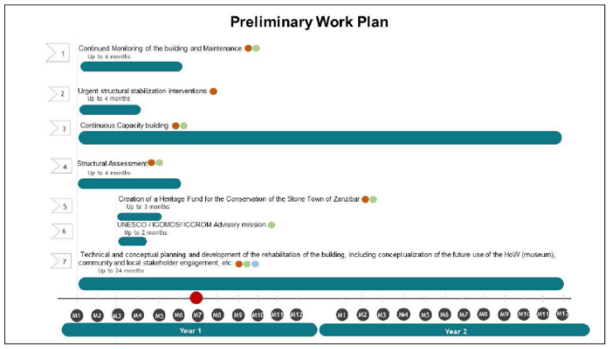
Structural assessment further included the stability of walls analysing the workmanship, loading and grouting and stitching method.





Observations:
- Further borehole tests were recommended in order to establish comprehensive and conclusive data to be used for the foundation designs during rehabilitation planning.
- Architecture assessment from extensive research and on-site assessment agreed to follow the 2015 morphology of the building (2015 as built architectural drawings)
- The recommended structural interventions included reinforcing the raft foundations, modifications to the steel structure and the restoration and strengthening of existing masonry walls.
- Set of drawings was prepared that examined the various building surfaces and structural members outlining the restoration methodology to implement.

(iii) Road map for emergency safeguarding measures and long-term conservation management needs.



Preliminary work plan as outlined by ICOMOS/UNESCO Mission in early 2021

In relevance to the ICOMOS Charter principles, road map setup was analysed that would involve reference to the original construction principles for walls, balconies, roofing and finishes. These in hopes that a restoration plan proposed could be implemented and put into action.

Observations:
The restoration plan proposed levels of intervention in line with achieving the goal.
- Urgent and immediate activities (such as reinforcement of openings, shoring of floors, protection from rain water, repair of props)
- Short term activities further discussions on the proposed monitoring and inspection systems that include and are not limited to continuous periodic monitoring (epoch monitoring), permanent monitoring using GPS/GNSS, creation of a BIM model, visual inspection and reporting protocols.
- Long term activities that revolve mostly around repairing cracks, restoring columns, repair of missing elements such as the roof, design of an investigation plan and implementation of a non-destructive diagnostic investigation campaign.

Source: (Ministry of Tourism and Heritage Zanzibar, 2021, #) Explanatory Report

Case Study 2: Beit Al Sahil Museum – People's Palace Museum
The case study – People's Palace Museum exhibits similar phenomena and risks as the House of Wonders. A similar approach is currently underway for the People's Palace Museum with the experience gained and insight from the previous case study focusing on the original construction principles and technology. The approach involves concentrating on the elements of roof, balconies and balustrades, walls, ceilings, finishes and services for assessment in order to propose viable solutions for restoration.

Source: (Ministry of Tourism and Heritage Zanzibar, 2022, #) Condition Report & Concept Design

Survey methodology and results

In this case study the exception is that (i) 3D photogrammetry survey with laser scanning has not been carried out as a result the conditional survey focused on (ii) On site assessment of the structural damage and (iii) road map for emergency safeguarding measures and long-term conservation management needs.

(ii) On site assessment of the structural damage

The on-site assessment was carried out by architects and engineers to determine the extent of damages to the Museum.

The structural engineers assessed the buildings foundations, walls, floors conditions, emergency supporting props used for shoring the walls to prevent collapse. They drilled 10 metres boreholes at three locations around the building, took disturbed and undisturbed soil samples for testing in the laboratories.
They also carried out Standard Penetration Test in the boreholes. These tests were essential to determine the soil type, depth and quality of groundwater which would

[5] Burnt clay tiles exist and articulated roof structures with timber truss systems.

[6] Balustrades are ornamental rail or capping with the supporting set of balusters. The balusters are metals that are either decorated or not with wooden or metal capping.

[7] The walls are massive, constructed of local stones set in lime mortar. The stones are not dressed and the plasterers and rendering are finished smooth with lime mortar and white washed several times.

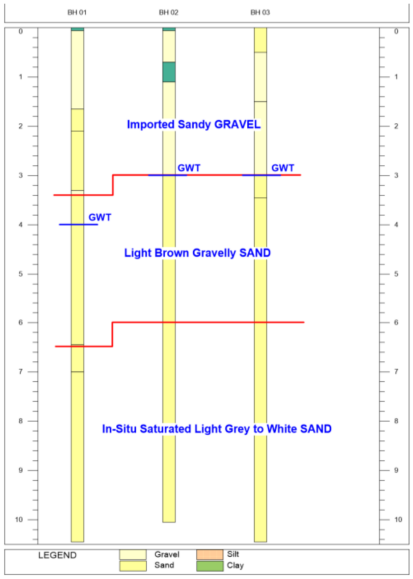
[8] 150mm diameter mangrove joists; timber boards on 50mm by 200mm hard wood timber joists; cement fibre boards, and hard boards in other areas.

[9] The windows are of glass panes and wood panels.

[10] The doors are made of wood panels, braced patterned and partial wooden panels and partial glass doors.

[11] The toilets are dirty and in other cases damaged. There are down metal pipes of 200mm that are broken and others are missing.

[12] The iron water pipes are corroded and decayed.



guide the engineers during restoration planning.

The architects carried out both visual and physical inspection of the main elements of the buildings; walls, floors, ceilings and openings. Photographs were taken as part of the documentation.
The service engineers also carried out inspections and documented the existing situation.

(iii) Road map for emergency safeguarding measures and long-term conservation management needs.

With reference to the ICOMOS Charter principles, road map setup will be analysed that would involve reference to the original construction principles for walls, balconies, roofing and finishes. As with case study - House of Wonders plans for a restoration plan proposal that would provide a road map is underway.

Source: (Architectural Pioneering Consultants et al., 2022, #)

Conclusion

The conditional survey approach carried out on both case studies (House of Wonders and the People Palace Museum) emphasised the advantage of combined methodologies. That is not only focused on on-site assessments but also coupled with the use of technology in this form 3D photogrammetry survey and BIM modelling. This provides a wider analytical perspective view of the current status and building condition. It is imperative to ensure that any action proposed is backed up with sufficient qualitative and accurate quantitative observations in order to establish a realistic and feasible restoration plan.

Furthermore, any action prior to the restoration process and strengthening of building components requires conversant understanding of the restoration principles. This is guided by intensive research and a team of multi-disciplinary experts with the core intention to limit the remedial measures to restoration and conservation first rather than introducing additional programs, functions, or materials.

In addition, the most fundamental factor is the establishment of the framework for funding conservation heritage and local economic developments that are linked and will ensure the execution of the restoration plan with all key stakeholders. The restoration plan would then guide and complement the road map proposal that would consider a three-tier (immediate-, short- and long-term plan) together with the risk management and rehabilitation strategies for building restoration.

References

Architectural Pioneering Consultants, GMP Consulting Engineers Ltd, Kamamba, D., & Design Incorporated Ltd. (2022). *Beital Sahil Museum - Condition Report and Concept Design*.

Department of Museums and Antiquities, Zanzibar by Pierre Blanchard for World Monuments Fund. (2015). *Conservation Plan for the Palace Museum*.

ICOMOS. (2011, October 11). *About ICOMOS*. Introducing ICOMOS - International Council on Monuments and Sites. Retrieved October 11, 2022, from https://www.icomos.org/en/about-icomos/mission-and-vision/mission-and-vision

Ministry of Tourism and Heritage Zanzibar. (2021). *Comprehensive Regeneration of House of Wonders - Explanatory Report*.

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IMPACT OF NEW BUILDINGS IN HISTORIC SITES

A paper presented during annual conference
on 19-20 October 2022 in Dar es Salaam

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IMPACT OF NEW BUIDINGS IN HISTORIC SITES

ABSTRACT

Cities global trend shows increasing urban population and expected to reach 70% by 2050 (Morris, 2017). This together with other phenomenon including urban renewal initiatives (due various reasons) and cities competition for attaining global status manifesting in way of new landmarks and iconic buildings have caused upward surge for demand of land in urban areas. To cater for new needs, replacement of old buildings and additions to some buildings has become inevitable. Some of affected buildings are in historic sites or the buildings themselves are historic as determined by relevant legislation.

Historic sites are sites protected by legislation (national or international). They usually consist of active conservation to underscore the artistic, social, scientific and historical importance. Historic sites usually have aesthetic significance, therefore the QUALITY of new addition in historic areas is important (MacDonald, 2011).

Building in historic sites impacts the sites directly or indirectly. The impact can be discussed in the realms of IDENTITY, ENVIRONMENTAL FACTORS, SOCIAL VALUES, ECONOMIC ASPECTS, SAFETY, RESILIENCE and SUSTAINABILITY. Architects and construction professionals impact historic sites through their actions under the items SITING, SCALE, FORM, MATERIALS, COLOUR and DETAILING. Depending on how buildings are designed and constructed in historic sites the impact can be on POSITIVE or NEGATIVE when looked within a particular aspect. This has sparked a global debate on how additions to historic sites should be handled.

This paper discusses impact of building in historic sites by visiting works in various parts of the world in which new buildings have been added to historic sites or complexes. This paper also visits works where some components have been added to historic buildings to respond to new needs and demands in their day to day usage.

Contents of this paper also aim at stimulating a national debate by presenting what has been done in various parts of the world hoping that Tanzania as a nation will chart out a better way of building in historic sites as a way of “strengthening efforts to protect and safeguard the world’s cultural and natural heritage” as advocated by United Nations (UN) Sustainable Development Goals (SDG).

The paper concludes by calling for creation of an objective guidance for works in historic sites. The author finally suggests a need for PARTICIPATORY QUALITATIVE IMPACT ASSESSMENT for all works in historic sites before projects are commissioned.

Key words: IDENTITY, QUALITY, PROTECTION, HERITAGE

1.0 INTRODUCTION

It is estimated that 70% of the world population will be urban by 2050. This means that there will be more people living in urban areas than any other time before. This phenomenon will necessitate creation of more spaces to cater for various activities human beings undertake. While urban population will continue to increase, urban land is not increasing or is increasing at a much slower pace (in cases where rural land is transformed into urban land). One way of accommodation increasing urban population is to promote adaptive reuse of old urban spaces including historic sites through urban renewal and transformation processes as large number of cities facing the challenge of increasing population appear to have underutilized historic buildings and sites embedded with cultural, social, economic and technological value (Morris, 2017). Due to this challenge and the limited urban land cities possess, building in historic sites by way of putting up completely new buildings, additions or remodeling is inevitable and will be part of urban renewal process as cities continue to grow.

2.0 CITIES GLOBAL TREND

2.1 Increasing urban population

Globally as explained earlier there is a trend of increasing urban population. Demand for shelter (one of basic needs of human beings) increases. Shelter for residential purposes and for activities that define lives of urban dwellers. This includes office spaces, market places, trading areas, shopping areas and shelter for basic social services such as schools and hospitals.

2.2 Aging of old structures

Many cities around the world have old structures which are aging and due to lack of measures to protect them and to strengthen their structural integrity they fall into the category of condemned buildings.

2.3 Urban renewal

There are several cities around the world that undergo a process of urban renewal. Urban renewal is a tool widely used by local governments to effect revitalizing “blight” areas through public investments that stimulates private development. Examples of blight include aging buildings which are unsafe for occupancy (could be aging structures or buildings affected by calamities such as floods or earthquakes), inadequate streetscapes or environmentally degraded areas (orcity.org)

2.4 Underutilization of historic buildings

Most cities facing the challenge of increasing population have historic buildings and sites. These places are usually embedded with cultural, social, economic and technological value. These historic places can be solutions to city space problems and could bring about economic and environmental benefits (Morris. 2017).

2.5 Cities push for global status

In an increasingly competitive world city leaders are engaging international celebrity architects to create new iconic landmarks that will strengthen their cities on world map. This phenomenon usually creates a conflict especially in historic cities such as those included on the World Heritage List where the city is already well recognized for its architectural, historic and aesthetic character (MacDonald. 2011).

3.0 IMPACT OF NEW BUILDINGS IN HISTORIC SITES

Due to cities global trend as discussed previously and the fact that urban space continue to evolve due to new needs of inhabitants change is inevitable. Building fabrics added to historic sites impacts historic sites with respect to **identity, environmental matters, social issues, economic aspect, safety, resilience and sustainability.** Depending on how buildings are created the impact can be **Positive or Negative** or in a complex way both.

3.1 Identity

Historic sites are identified by the skyline that is made up of historic buildings that have strong identity and character. The Zanzibar seafront is identified by Old Fort and House of Wonders. The dome of St. Paul's cathedral has dominated London skyline for long (Britannica.com). Obscuring these structures by adding others would definitely impact the skyline in a negative way.

3.2 Environmental and Safety matters

Construction activities in historic sites could lead to degradation of historic monuments. Vibrations caused by machinery involved in construction can be a source of structural damage to existing historic buildings (Adedeji & Opeyokum, 2010). Construction activities and possibly further use of new buildings can contribute to significant air pollution. UNESCO through United Nations Economic Commission for Europe -UNECE (2020) has raised an alarm that pollution in air is a cause for degradation of surfaces of historic buildings and monuments.

3.3 Social issues

Social values within historic districts can be impacted by new buildings added to historic sites. New buildings usually come with different uses and different inhabitants. A new hotel building in a historic district brings with it different inhabitants and their different social patterns. The Park Hyatt and Serena Hotel projects in Stone town have had a notable change in social aspects of the area close to Kelele square. Serena hotel was previously a Telecom building

(archnet.org) and repurposed for hotel use. The change of use and hence inhabitants has led to a change of social patterns in the area.

3.4 Economic aspect

Economic impact created in historic sites due to new buildings can either be positive or negative or both. When construction activities take place near historic monuments they can be impacted negatively (structurally and aesthetically) as discussed earlier. Due to the fact that historic sites are of outstanding universal values it is necessary to protect them from these inevitable impacts. As such there has to be funds for protection and control activities. For example maintenance works on surface of Colosseum in Rome involves a sum of Euros 680,000 per annum (UNECE. 2020).

3.5 Resilience

Historic built heritage with its spatial and functional configuration has inherent characteristics related to resilience. Resilience is the capability to prevent, adjust and overcome changes; catastrophic or traumatic (Fatiguso, F., De Fino, M., Cantatore, E., Caponio, V., 2017). New buildings in historic sites can impact residence in a negative way. A historic district once resilient of floods for instance could become vulnerable to floods due to inconsistent addition. Generally new buildings could affect the resilience of historic against environmental pressures mainly related to climate change.

3.6 Sustainability

Adaptive reuse of historic buildings has strong positive impact on sustainability. Adaptive reuse is the process of changing the building usage to fit new owners' requirements (Latham, 2000). The result of adaptive reuse is not only retaining the heritage building but also a conservation of efforts, skills and dedication of original builders (Love and Bullen, 2009). Cooper (2001) has stressed that adaptive reuse has positive impacts on materials and resources efficiency (environmental sustainability), cost reduction (economic sustainability) and retention (social sustainability).

4.0 ARCHITECTS ACTIONS IMPACTING HISTORIC SITES

While architects are always brought onboard when decisions to build in historic site has been made their design decisions and actions impact historic sites. These actions and decisions are part of design and production information process. They include **Siting, Scale, Form, Materials, Colour and Detailing.**

Improper **Siting** can have negative effect on identity of a historic site. A historic monument obscured by a new building loses identity. A well placed new building will relate well to the geography and history of the place and the lie of land (English Heritage/ CABE, 2001).

An out of **Scale** new addition may diminish the significance of a nearby historic monument.

A new addition whose **form, colour, materials and Detailing** tends to blend with historic building protects identity of a monument or historic site.

According to the Commission of Architecture and Built Environment (CABE)/English Heritage (2001), the right approach comes through thorough examination of context of proposed development in adequate detail and relating the new building to its surrounding through an informed character appraisal. This is regardless of the chosen approach 'Fitting in' or 'contrasting the new with the old'. A successful project is likely to underscore the following:

- A good relation to the geography and history (**Scale/Materials/Colour**)
- A happy sitting and fitting in the pattern of existing development and routes through and around it (**Form**)
- Respect for important views (**Form/Scale**)
- Respect for scale of neighbouring buildings (**Scale**)
- Enhance the quality of built environment by using materials and building methods with quality as existing buildings or higher (**Materials/Detailing**)
- Creation of new views and juxtapositions which add to variety of texture of the setting (**Siting/Form**)

A successful project will assist in protecting and safeguarding historic sites and thus world's cultural and natural heritage in line with Sustainable Development Goal (SDG) 11 of United Nations (UN).

5.0 THE GLOBAL DEBATE

The global debate centres on balancing human development and sustainability. Sustainability is related to preservation of historic buildings and sites which are underutilized in many cities despite their economic and environmental benefits. These historic places also have cultural, social, economic and technological value (Morris, 2017). It will be thought that historic sites and buildings will be considered to be reused in adaptive way while developing cities. However the opposite happens. The quest for building for the future utilizing emerging green technologies and development momentum pushes cities to run down historic buildings that lack modern features (such as adequate steel reinforcement or airtight window frames).

Morris (2017) strongly argues that the best development solution is NOT that which destroy and replace historic building with a new and outstanding green

building but the one that embrace the lessons and existence of historic buildings with their positive environmental, social and economic implications.

The UN in recognizing the effect of increasing urban population combined with humanistic value of heritage buildings and sites has underscored the importance of preserving world heritage. SDG number 11 reads:

Make cities inclusive, safe, resilient and sustainable, including "strengthen efforts to protect and safeguard the WORLD' CULTURAL AND NATURAL heritage."

The four key points (Inclusive, safe, resilient and sustainable) can be used to understand various arguments in support of conservation and re use of historic buildings (Morris, 2017).

6.0 SELECTED CASES

Appropriateness of new developments in historic context is perceived with different views. Some argue that new insertion to existing historic urban environment should be in style of old (fit in). Others argue that each generation represent its own time (contrasting). New additions should reflect technology, materials, architectural language and ideas of each generation (MacDonald, 2011).

The following examples are presented to show different approaches taken. The purpose of presenting these examples is not to evaluate them but rather to bring to light different approaches taken by various architects faced with different circumstances and challenges. These examples are expected to sparkle a debate among architects in Tanzania as to what constitute appropriate handling of historic sites.

6.1 Additions to historic sites

CONFERENCE HALL, STATE HOUSE DAR ES SALAAM
Source: ipatanzania.com

RECEPTION BUILDING STATE HOUSE, DAR ES SALAAM

Source: ipatanzania.com

PARK HYATT. ZANZIBAR

Source: hyatt.com

PARK HYATT ZANZIBAR

Source: hyatt.com

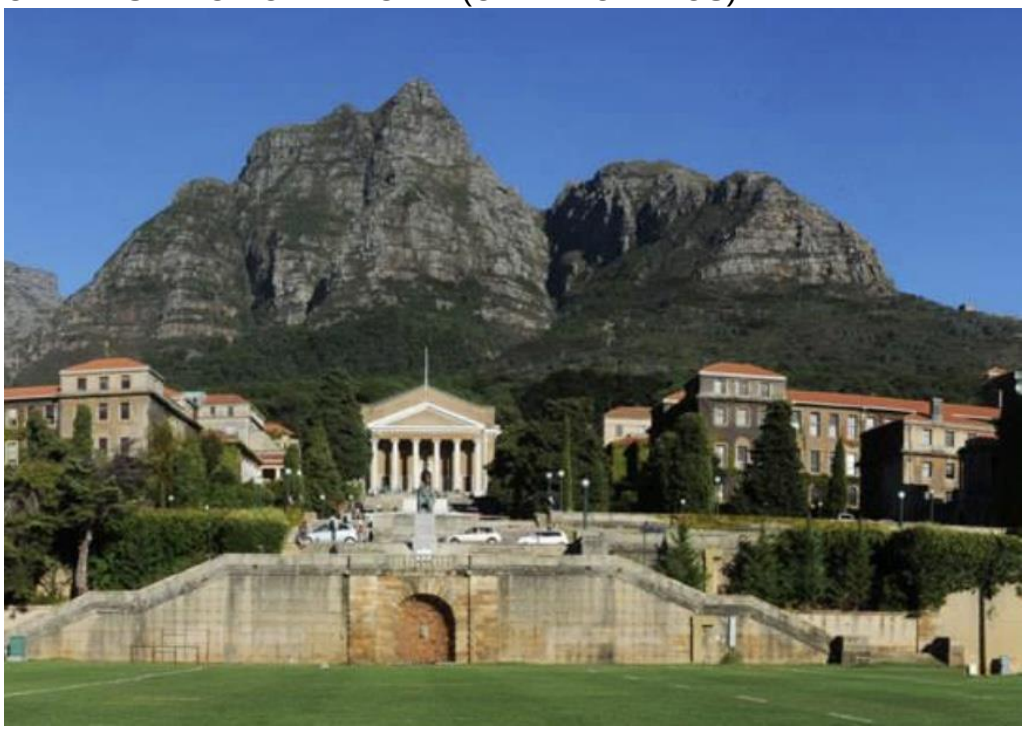
THE WHITE HOUSE, WASHINGTON DC.

Source: Whitehouse.gov

WEST WING OF THE WHITE HOUSE

Source: insider.com

UNIVERSITY OF CAPE TOWN (UPPER CAMPUS)



Source: Businessinsider.in

UNIVERSITY OF CAPE TOWN (UPPER CAMPUS)

Source: Uct.ac.za

6.2 Additions to historic buildings

LOUVRE PARIS

Photo taken by author, 2013

MUSEUM OF MILITARY DRESDEN

Source: Architectural Digest. June 2020

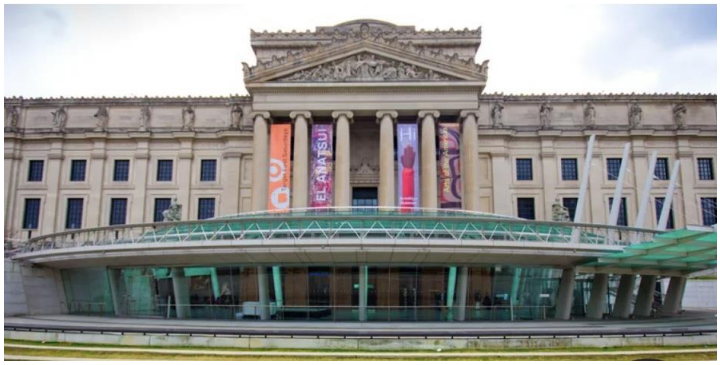
PORT AUTHORITY ANTWERP

Source: Architectural Digest. June 2020

ROYAL ONTARIO MUSEUM

Source: Architectural Digest. June 2020

UNION OF ROMANIAN ARCHITECTS
Architectural Digest. June 2020



BROOKLYN MUSEUM
Source: Architectural Digest. June 2020

7.0 CONCLUSION AND RECOMMENDATIONS

Increase of urban population is inevitable consequently building in or near historic sites will continue to happen in many historic cities around the world as human needs keep on changing. And for cities of developing countries where Real Estate financial muscle seem to have an upper hand in cities' development decision process dangers of pulling down historic buildings to give way for new modern buildings loom. While careful chosen approach in building in historic sites can achieve positive impacts, pulling down historic structures endangers existence of world heritage. It is therefore necessary to have mitigation efforts and strategies to safeguard not only national interest but the world at large. Appropriate strategies and efforts can come through by:

7.1 Achieving a shared understanding

There is a need to achieve a shared understanding of values and principles for different stakeholders to achieve desired positive outcome while working in historic sites. Collaboration, shared commitment, mutual respect and shared commitment to the vision included in the project is necessary for project's successful outcome. Appropriate buildings are an outcome of creative dialogue between planning authorities, the client, the architect and other key professionals involved (English Heritage/CABE, 2011). It is encouraging to see in some countries heritage institutions working together with local governments in developing guidance that will facilitate a shared understanding of what constitutes appropriate development in historic environment between owners, developers and decision making bodies (MacDonald, 2011).

7.2 Creation of appropriate policies

Policies that will create objective guidance are necessary. Policies should base on 3 Cs: **Certainty** in planning system about what constitutes appropriate development**, Consistence** in decision making and communication and **Consultation** between government and development sector. There is a need to establish well-understood standards to assess new developments occurring in heritage sites (MacDonald, 2011).

7.3 Professionals right actions

Professionals' decisions must be well informed and should be made with integrity of purpose. The purpose being to achieve SDG 11. In efforts to promote ethical standards UN has written a set of "principles for sustainable and inclusive urban design architecture" which architects are expected to sign up. These are included in San Marino Declaration that is expected to be launched by architect Sir Norman Foster. The declaration according to Norman Foster is equivalent of the oath that physicians in ancient Greece undertook to uphold ethical standards. The declaration is a condensation of SDG (Dezeen.com, 2022).

7.4 Creation of alternative areas for development

Setting aside new areas for development is one of the ways of relieving historic districts from pressure of Real Estate financial muscle. Several cities around the world have created new “cities” mostly comprising mixed use facilities. These have become areas and grounds for architects to experiment and showcase their modern and contemporary endeavor. An example is Canary Wharf in London. It is considered one of the largest urban regeneration projects in Europe consisting of 770,000sqm of office space, 90,000sqm of retail space and over 2000 apartments (Canary wharf Group Plc., 2022).

The La Defense area of Paris provided grounds for French and International architects to showcase modern and contemporary building and relieving historic districts such as Champs Elysees from negative impacts of new buildings.

In Zanzibar the new development taking place in Fumba peninsula could relieve Stone town from pressure of redevelopment. There is already of evidence of experimentation on green buildings, modern construction techniques in some proposed projects like the Burj Zanzibar to be constructed in Fumba Town, Nyamanzi area. Such projects and the talked about new passenger ferry terminal at Fumba will reduce the need to rebuild/extend the current port area near stone town.

The New Kigamboni city project which was planned for Kigamboni area in Dar es Salaam could have reduced the pressure of creating new buildings from Dar es Salaam Central Business District where a number of historic buildings such as Old Boma which has been dwarfed by nearby Johari Rotana hotel building.

7.5 Need for Qualitative Impact assessment

In Tanzania, in addition to quantitative qualitative social matters embedded in mandatory Environmental and Social Impact Assessment (ESIA) for projects, projects to be undertaken in historic sites need to go through a “Qualitative Impact Assessment” (QIA) which has to be largely an ARCHITECTURAL process of ASSESSING QUALITY AND APPROPRIATENESS of projects to be undertaken in historic sites. This process should be participatory and to involve a wide range of stakeholders including the public. Procedure for QIA can be set out through a common understanding among different stake holders and through lessons learnt from successful examples.

8.0 REFERENCES

Adedeji, A. & Opeyokun, O. (2010), Environmental impact on historic monuments in Nigeria, available at https://www.researcgate.net

Commission of Architecture and Built Environment (CABE)/English Heritage (2001), Building in Context, New Development in Historic Areas. Available at https://www.designcouncil.org.uk/fileadmin/uploads/dc/Documents/building-in-context-new-development-in-historic-areas.pdf, Accessed on 5th September 2022.

Fatiguso, F., De Fino, M., Cantatore, E., Caponio, V., (2017), Resilience of historic built environments: Inherent qualities and potential strategies, International high performance built environment coference-A sustainable built environment conference 2016 series (SBE16), iHBE 2016, available online at www.sciencedirect.com

https://group.canarywharf.com/. Accessed on 5th October 2022.

https://sdgs.un.org/goals/goal11, Accessed on 5th September, 2022.

https://unece.org/environment/press/dirty-air-endangers-unesco-world-heritage-sites-and-produces-high-costs. Accessed on 8th October 2022.

https://www.archnet.org/sites, accessed on 8th October 2022

https://www.britannica.com/topic/Saint-Pauls. Accessed on 9th October 2022.

https://www.dezeen.com/2022/09/23/norman-foster-un-sustainability-declaration-news/. Accessed on 8th October 2022.

https://www.hyatt.com/en-US/hotel/tanzania/park-hyatt-zanzibar/znzph/photos-reviews. Accessed on 10th October 2022.

https://www.orcity.org/economicdevelopment/what-urban-renewal. Accessed on 9th October 2022.
https://www.uct.ac.za. Accessed on 10th October 2022.

https://www.whitehouse.gov/about=the-whitehouse. Accessed on 10th October 2022

Latham, D. (2000). "*Creative reuse of Buildings"*. Donhead Publishing Ltd, Dorset, United Kingdom.
Love, P.E.D., and Bullen, P.A. (2009). "Toward the sustainable adaption of existing facilities". *Facilities,* **27**(9), pp. 357-367

MacDonald, S. (2011), Contemporary architecture in historic urban environments.

Mafi, Nick., (2020), 14 Beautiful Examples of When Historic and Modern Architecture Come Together. Available at https://www.architecturaldigest.com/gallery/beautiful-examples-historic-modern-architecture-come-together. Accessed on 20th September 2022.

Morris. I. (2017), The case for historic buildings: Lessons on balancing human development and sustainability.

conservation

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Article

Urbanization and Vulnerability of Architectural Heritage: The Case of Dar es Salaam CBD

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Abstract: The architectural heritage present in Dar es Salaam Central Business District (CBD) spans across Arab, German, British, and post-colonial eras. The city is rich in buildings with combined architectural styles. Over the past few decades, Dar es Salaam has been experiencing considerable pressure from urbanization. This has resulted in a boom of contemporary construction approaches, yet little concern has been given to the existing old buildings and historical fabric in general. Although urbanization is an unstoppable reality due to the forces it carries with it, it is necessary to find ways to strike a balance between urbanization and its impact on the original urban setting which is less explored in Dar es Salaam. This study investigated the relationship between urbanization and architectural heritage with the intention to balance the two, and set to answer questions about how the two can co-exist. Through a case study approach, changes such as physical transformation, elimination, and replacement of architectural heritage buildings were investigated and analyzed through maps, graphs, and charts. The results have indicated that the driving forces of urbanization such as population, policies, and economy have been influencing each other in physical transformation and demolition of architectural heritage buildings throughout the period between 1967 and 2020. The study suggests that activities such as ecotourism which will enhance social economic benefits should be promoted to support both the urbanization process and architectural heritage conservation.

Keywords: urbanization; heritage; architectural heritage; urban form; built fabric

1. Introduction

Urbanization has been regarded as one of the major forces currently experienced by the whole world. By 2018, 55% of the world's population was living in urban areas [1].This trend is expected to increase to 68% by 2050 whereby 2.5 billion people are expected to be in urban areas, most of them in Asia and Sub-Saharan Africa [1]. The built environment has become transformed in the urbanization process due to increased demand of services such as transport, clean water, energy, adequate housing, sanitation and manufactured products [2]. Due to such needs, gov-

ernments and the private sector have been forced to invest in the construction industry in large scale, replacing old buildings with new ones in order to cater for infrastructure and service needs [3]. Zhang et al. [4]noted that the construction industry is the major contributor to factors associated with social, economic and environmental depletion. For this reason, much attention is being paid to issues concerning environmental depletion where focus has been on the construction industry, to reduce the impact it causes to the environment. Rodwell [5] suggests that one way of ensuring environmental sustainability is to conserve existing buildings including historical buildings and sites.

The situation in Tanzania, according to NBS Census[6–9], shows that the number of people living in urban areas is 44.9 million. With the historical trend from 1967 to 2012, there has been an increase of 12 million people in urban areas. The predicted rate of urban population growth is 1.4 million people between 2012 and 2050, which is twice the rate of total population growth. This means that in 25 years, more than half of the population in Tanzania will be living in urban areas [3].To react to such development of events, the construction industry has been reported to have a growth above the general economy and has responded to investments done in infrastructural, residential and commercial establishments [2]. The demand has pushed for new architectural interventions with the expectations that old buildings will sacrifice their heritage values [1].

Dar es Salaam is a city in Tanzania located along the East Coast of the Indian Ocean, and it is among the fastest growing cities experiencing rapid urbanization in Sub-African Africa [10]. The city accommodates 10% of the national population and 30.3% of the country's urban population. Its population is expected to double from 4.4 million people in 2012 to 10.8 million people in 2030 [3]. The history of Dar es Salaam dates back to the 8th Century when it was a small native settlement[11,12]. In mid-19th Century, the city started expanding,when Sultan Majid of Zanzibar initiated a plan and constructionsfor a new town by the large inland harbor close to a small native village of Mzizima, and then grew further through German, British colonial periods and post-colonial period [13,14]. The city is therefore rich in buildings with a combination of architectural styles. Apart from Arab, German and British architecture, the remnants of native Swahili and Indian buildings add to the asset of architectural heritage of the city, which creates a sense of legibility and demonstrates the age of the city to its inhabitants [13,14].

In Dar es Salaam, architectural heritage conservation has been managed by various organizations under both government and private. Several lists have been given out by the Department of Antiquities under the government Ministry of Natural Resources and Tourism(MNRT), Dar es Salaam Master Plan Consortium under the government Ministry of Lands, Housing and Human Settlement Development and by DARCH(Dar es Salaam Centre for Architectural Heritage) which is a private non-profit organization dealing with conservation of architectural heritage. The lists have been contradicting one another as they are not reconciled as one resulting to conflicts on managing architectural heritage buildings giving power to urbanization due to lack of a consistent list[15].

Over the past few decades, Dar es Salaam has been experiencing rampant pressure from urbanization [10,16]. This has resulted in a boom of contemporary construction approaches with little concern on the existing old buildings and historical fabric in general. This is manifested in the abandoning of once used historical buildings to a state of no repair. The intertwining of architectural styles provides a sense of place that evokes life before the present and contributes to the character that serves as an intangible asset [16,17]. The appearance of building materials has blended to the streetscapes—carved timber doors and windows, decorative ironwork, timber facades, wooden railings, roofing tiles, etc. The original building heights at the CBD balanced the skyline where common buildings remained humble, giving room to religious buildings such as temples, churches and mosques to dominate the silhouette and serve as points of reference for the city [18].

Although urbanization is an unstoppable reality due to the forces it carries with, it is necessary to find ways to strike a balance between urbanization and the impact it carries to the original urban setting which is less explored in Dar es Salaam. Researches and literature on the development of Dar es Salaam have been done; nonetheless, few describe explicitly the expenses the architectural heritage incurs to accommodate the pressure brought about by the urbanization process. Amar [2] investigated stakeholders' perceptions in Australia and Tanzania on the conservation of cultural built environment. Kigadye [10]studied architectural heritage in rapid urbanizing cities focusing on legislative and institutional frameworks for management of conservation areas in the city center of Dar es Salaam. These studies were based on decision making aspects which include a legislative framework with little regard for what happens on the ground.

Despite the important roles that urbanization and architectural heritage play and existence of the relationship between the two fields, little has been studied to establish this relationship and how the two can co-exist. Unceasingly, interventions have been implemented by different stakeholders [2]. It has also been observed that the interventions lack reconciliation [19].This study sought to investigate the relationship between urbanization and architectural heritage with the aim of trying to strike a balance between the two, and answer the question about how the two can co-exist. The study hoped to add knowledge about socio-economic potentials of architectural heritage as a basis of welcoming new economic paradigms brought by urbanization. The findings and conclusions made will help in making informed decisions in handling the two processes, in order to have a common goal with respect to attaining urban socio-economic improvement. It will also benefit a wide range of stakeholders, from both private and public sectors, involved in urban design, urban planning, research, tourism and city dwelling.

2. Materials and Methods

2.1. Conceptual Framework

The study employed morphological analysis on studying urbanization and architectural heritage. The approach focused onbuilding level, street level and city level [20–22]. At building level, the information was for the

purpose of:(i) studying the housing and social economic demands of architectural heritage buildings in the process of urbanization, and(ii) determining the strategies that have been used for the coexistence of urbanization and architectural heritage. At street and city levels, the study focused on information related to appearance and functionality of streets and the city in general, as influenced by development policies, population, and economy, and how the two have been merged by such influences [20–22]. Architectural heritage vulnerability acts as a dependent variable to urbanization, as illustrated in Figure 1.

2.2. Methods

To establish a link between urbanization and architectural heritage, a case study within Dar es Salaam CBD was conducted. Dar es Salaam CBD was chosen as it is an active area with a substantial number of architectural heritage sites where rapid changes are taking place. Again, it is neither a world heritage site nor is it on a tentative list. A criterion for choosing buildings from each ward was determined.

The city was selected because it is an area with a good number of architectural heritage buildings, which are under pressure of demolition, and has a good number of new structures as a manifestation of clear physical transformation. It is also multi-faced in terms of different types of buildings under urbanization. Data from literature review and observation was employed in the analysis of this study [23,24]. Literature review was done on public documents such as acts, policies, laws, exhibition panels, reports, journals, master plans, satellite maps and statistical data.

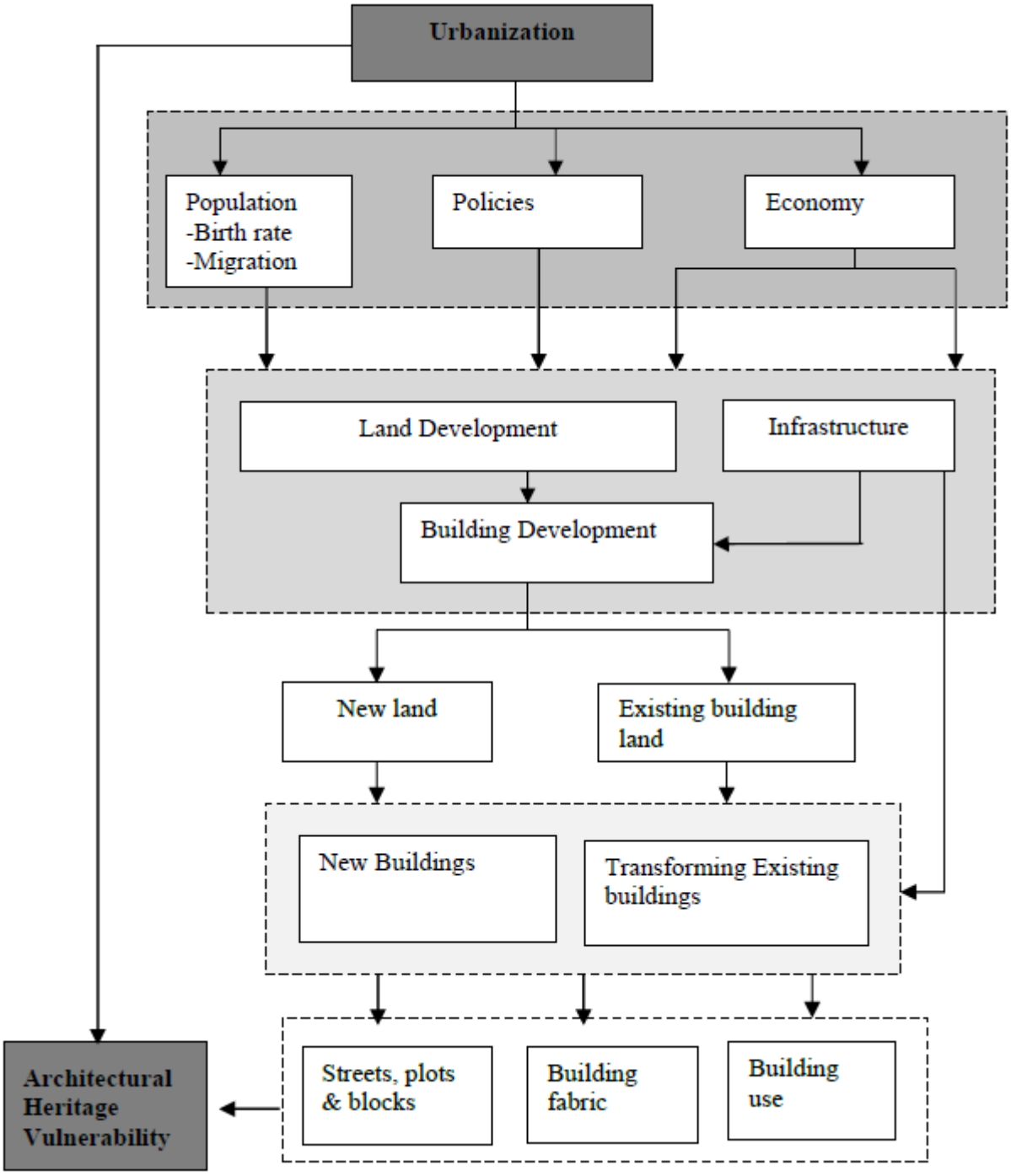

Figure 1. Conceptual framework (Source: Author,2020).

Buildings identified as being of architectural heritage in this research are based on the list given out by the Department of Antiquities (DOA) in 1995, with 28 buildings to be under conservation, 27 of them located in Dar es Salaam CBD. The list given out by the department of Antiquities in 2006 with a total of 110 buildings was controversial, and a new list was supposed to be given out by the task force created but no list has been given out to date, list provided by DARCH (Dar es Salaam Centre for Architectural Heritage) with 58 buildings, 52 still standing and 6 buildings demolished and list by Dar es Salaam Master Plan Consortium

2012–2032 which has a total of 259 buildings located at the CBD. All the lists are considered valid.The provision of lists has been guided by The Antiquities Act of 1964 and its amendment in 1979[15,25]. It was realized that despite of existence of the lists a detail description of the degree and extent of conservation had never been clearly stated.Until recently in 2011, the Dar es Salaam Master plan 2012/2032 established a list of 259 buildings to be under conservation and has documented location and extent of alteration i.e., renovation, renovation for 99 buildings among them but not yet under implementation due to the issue of mandate on who has power over this.

Architectural heritage elements present in the case study area were observed, and a photo registry was consulted; these were related with satellite images, aerial photographs, and auto photographs. Maps were reconstructed from aerial photographs and Google earth satellite images of 1967, 1994, 2005, 2010, 2015 and 2020 to identify the demolitions and the newly-built structures with the interval between 27, 11,5,5,5 years respectively. The analysis started in the 1960s because they are years when the country had just obtained its independence in 1961. It was a period of establishment of new policies such as Arusha Declaration of 1967 which had big impact to the built fabric of Dar es Salaam CBD. Threats of demolition of buildings had also started despite of the existence of Antiquities Act of 1964 to protect architectural heritage buildings. The intervals of the years are not the same due to the challenge of obtaining aerial photographs and satellite images. Google earth satellite images of the study area of Dar es Salaam CBD are available after the year 2000, which is after the beginning of the new millennium of 21st Century. Hence, aerial images are used for the years 1967 and 1994.

3. Results and Discussion

3.1. Physical Transformation of Architectural Heritage Buildings

Physical transformation in this study includes changes in facades in terms of colors, additions and removal of structures and objects which were available when the building was built. Due to the influence of urbanization, historical buildings have been altered to fit with functions assigned to them due to new needs caused by urbanization (refer to Figures2 and 3). The needs include residential, office and commercial space.

(a)

(b)

Figure 2. (**a**) Building at the corner between Samora Avenue and Morogoro Road with facades changed to accommodate current functions. (**b**) Dahya Punja Library built in 1928 for Gujarat community at the corner of Indira Gandhi St. and India St. with parts of facades changed to modern materials. (Source: Author,2020).

(a) (b)

Figure 3. (**a**) NBS building (**b**) Survey and Mapping Division building; Series of German buildings with balconies covered to increase the floor plan area. (Source: Author, 2020).

Many commercial streets have been observed to have buildings with constantly changing facades especially for the ground floors to accommodate commercial activities. This has been the case in many buildings along Morogoro Road. Buildings along Kivukoni Road (German buildings) have had their functions changed, and some parts of the buildings such as balconies have been covered to increase indoor workable space.

3.2. Elimination and Replacement of Architectural Heritage Buildings

Between 1967 and 1994, as noted, at least 9 buildings around Samora Avenue, Bridge and Kaluta streets were demolished, and at least 12 new buildings were built. Among the 12 built buildings, at least 9 were built on unbuilt sites and 3 were built on sites where old buildings had been demolished (Figure 4 below).

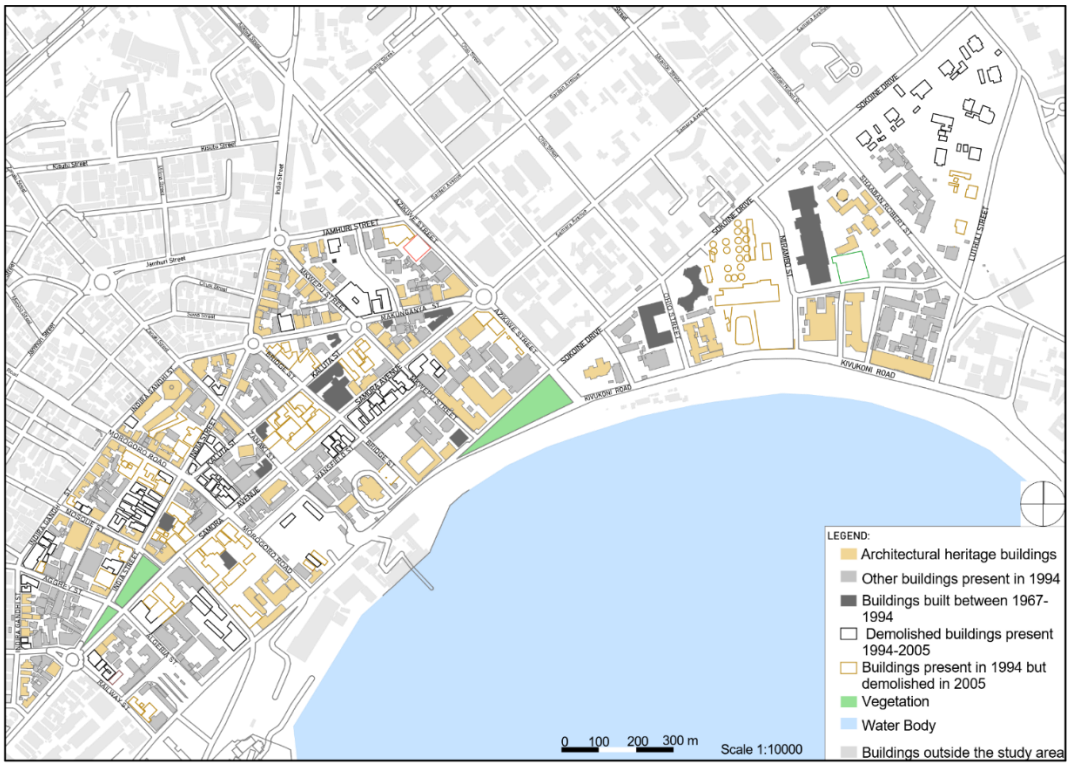

Figure 4. Demolitions and new buildings between 1967 and 1994 (Source: Author, 2020. Modified from a satellite image of 1967 and an aerial photograph of 1994.

Some of the buildings built between 1997 and 1994 are Sukari House at the junction between Ohio Street and Sokoine Drive, built around 1988; NIC Investment building(LIFE House) at the junction between Ohio Street and Sokoine Drive, built around 1980's; the Bank of Tanzania Building along Mirambo Street[26], built around 1970's(this was demolished in early 2000's and built anew); Ministry of Water building located at the junction between Sokoine Drive and Mkwepu Street, built around 1978; Extelecoms building along Samora Avenue and Mkwepu Street, built around 1970's; and Masdo building at the junction between Makunganya and Samora Avenues, built around 1970s.

Between 1994 and 2005 (a period of about 11 years), at least 57 buildings were demolished, and at least 22 new buildings were built on sites where old buildings had been demolished (Figure 5. Buildings built around this time were of mixed ownership; these include Hyatt Regency, Dar es Salaam (Kilimanjaro Hotel) located along Kivukoni Road. This hotel was built around 2005 after the demolition of the old building of the same hotel owned privately. The Bank of Tanzania twin towers located along Mirambo Street and Sokoine Drive were built around 2005 after the demolition of an earlier old structure. These twin towers were the first high rise glass structures in the city. The buildings are owned by the Government of Tanzania. The plot behind the State House, along Luthuli Street, was previously dominated by high class residential houses. About two of these structures were demolished during this interval and replaced by new government institution buildings. Along Indira Gandhi Street, at the site of Khoja Shia Ithnasheri Mosque, a building was added, privately owned by Indian communities, while NHC built a new tall structure at the corner between Samora Avenue and Morogoro Road.

Between 2005 and 2010 (a period of 5 years), at least 25 buildings were demolished and at least 11 new structures built (Figure 5). During this time, the private sector was building at a faster pace than corporations and the government. Awareness about architectural conservation had risen. Many protected buildings which were demolished were identified by names such as Bagamoyo House along Morogoro Road, identified by Markes[15]; Registry building along Makunganya Street, located at the corner between Samora Avenue and Railway Street was demolished in 2008. New buildings built during this time and identified by names are NHC House located along Samora Avenue, and owned by a corporation; Diamond Plaza building at the corner of Indira Gandhi Street which is a residential apartment, and privately owned; and Rainbow Hotel, which is situated along Morogoro Road, and privately owned. Others include Elite Tower, along Azikiwe Road, which is a privately owned commercial tower; LAPF Pensions Fund at the corner between Mkwepu and Kaluta streets, a high-rise commercial building which is owned by a corporation. At this interval, many of the buildings that had been demolished and built anew were located around and beyond Samora Avenue from the Indian Ocean. Most of these are privately owned.

Between 2010 and 2015 (a period of 5 years) at least 7 buildings were demolished and at least 16 buildings built (refer to Figure 5). The private sector had increased the rate of building followed by corporations and the government. Some demolished buildings included Quality Shop, located along Samora Avenue, which was demolished in 2011; Light Corner Building also along Samora Avenue, demolished in 2011; Blaschke House along Samora Avenue, demolished in 2011; and Salamander building (a famous restaurant) located along Samora Avenue, demolished in 2013. During this time there was a major construction project underway—The Bus Rapid Transport (BRT) project. New bus lanes were constructed along Morogoro and Kivukoni roads in the study area. This project changed the use and facades of buildings and streets where it was being carried out. The street turned more commercial and very many buildings had their ground floors used for commercial purposes. Glass and Aluco bond were used as façade materials. Some buildings which were constructed around this time were PSPF twin towers along Mission Street, Samora Tower along Samora Avenue and Rita Tower located along Makunganya Street and Simu Street. This building replaced an old building which had been demolished. Government institution buildings were also built; these included the Tanzania Commissionfor AIDS building, along Luthuli Street, and four commercial/residential buildings along India Street. Blaschke Building was a replacement by a commercial tower which currently houses Exim Bank; besides, the Golden Plaza building along Indira Gandhi Street was replaced by Solitaire Plaza, a commercial residential tower. At the corner between Samora Avenue and Bridge Street the previous Light Corner building has been replaced by a commercial residential tower owned by NHC, also known as Samora Tower.

Between 2015 and 2020, the rate of demolition decreased compared to the past five years. At least 3 buildings were demolished, and 14 new buildings were built to replace previously demolished buildings (Figure 5). Some of the demolished buildings were Billicanas building located at the corner between Mkwepu Street and Makunganya Street. The site, which

remains unbuilt, is used as a temporary car parking space. Two other buildings were demolished along Samora Avenue. New buildings include Rotana Hotel, located along Morogoro Road and Mansfield Street; DCL Commercial Bank building, located along Morogoro Road; Golden Tulip Hotel, located along Jamhuri Street; and a high-rise accommodation building still under construction within the premises of St. Joseph Cathedral. Most of these buildings are under private ownership.

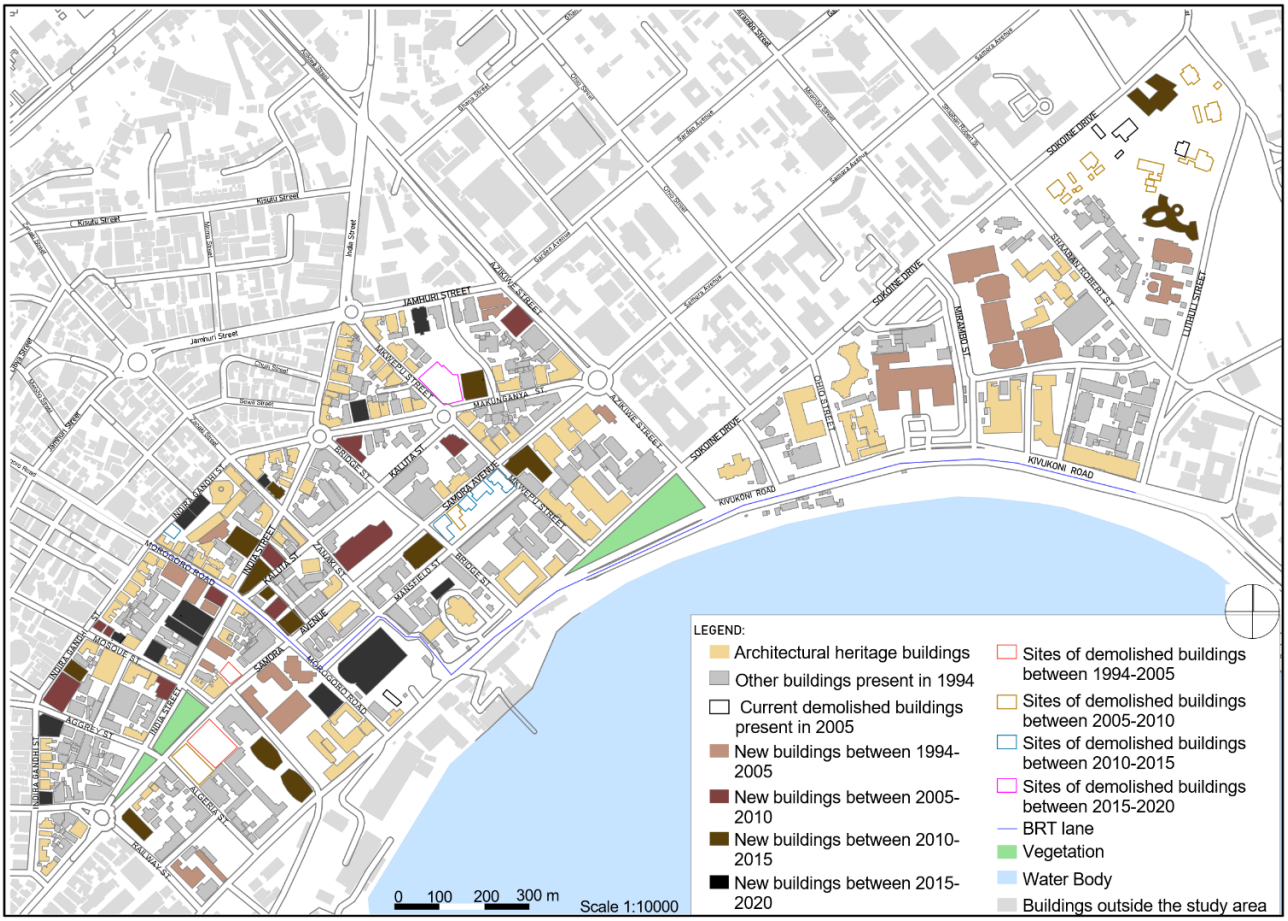

Figure 5. Demolitions and new buildings between 1994 and 2020.(Modified from satellite images 1967, 1994, 2005, 2010, 2015 and 2020) (Source: Author, 2020).

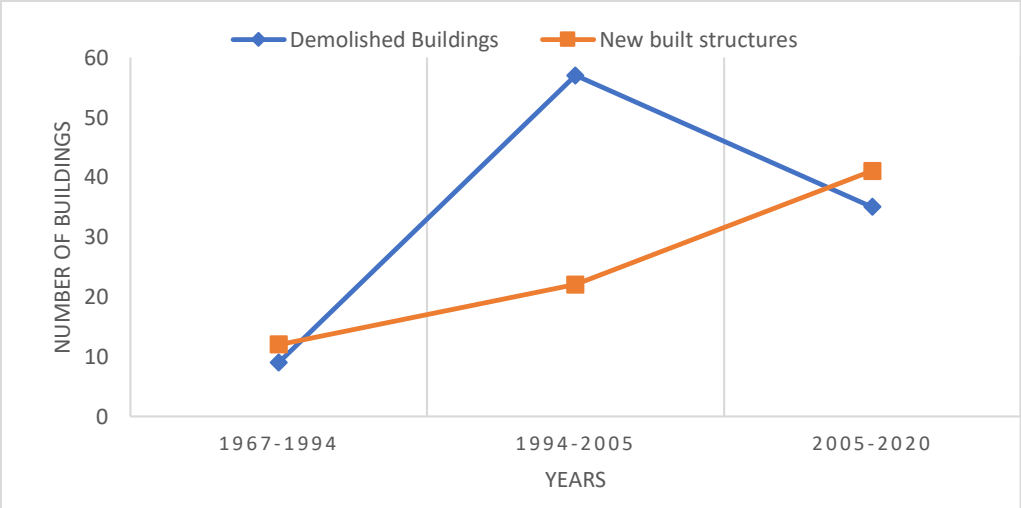

Figure 6. Summary of demolitions and new buildings (1967–2020).(Source: Author, 2020).

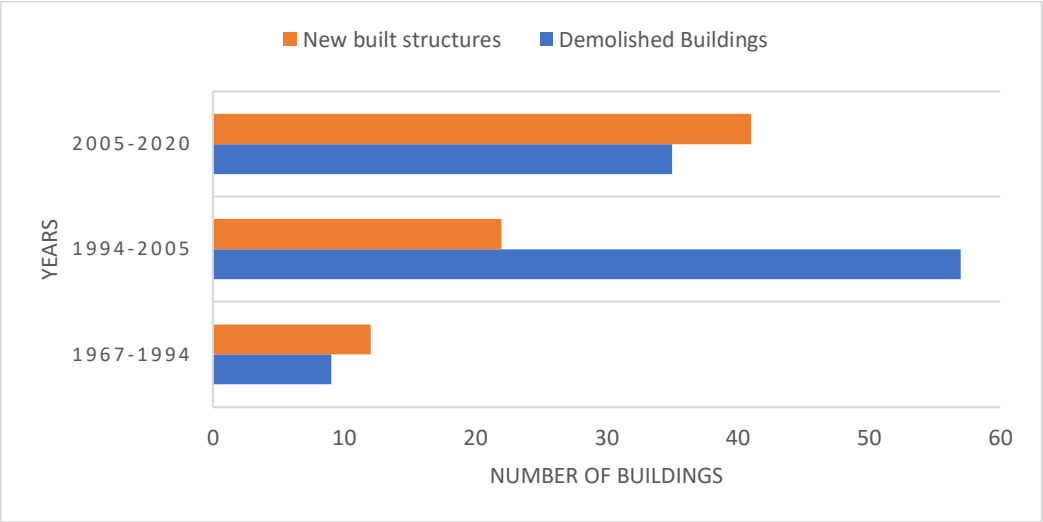

Figure 7. Summary of demolitions and new buildings (1967–2020).(Source: Author, 2020).

Between 1967 and 1994 (refer toTable 1,Figures 6and 7,more buildings were built than demolished. This means that there was still unbuilt land around the study area. Between 1994 and 2005, the number of demolitions surpassed the number of built structures as already explained; which shows that due to shortage of land, old buildings had to be demolished to give way to new buildings, although the number of newly built structures did not fill all the empty spaces that had been created. Between 2005 and 2020, the number of new buildings surpassed the number of demolitions as shown in Table 1, Figures 6 and 7. The curve indicates that the number of new buildings rose continuously until 2020, but such buildings have not been able to fill the spaces previously occupied by demolished buildings. This means that after all empty spaces of previous demolitions have been built, demolitions will start again to create empty space for new buildings.

Table 1. Summary of demolitions and new buildings (1967–2020).

Years	Interval	No. of Demolitions	No. of Built Structures
1967–1994	27	9	12
1994–2005	11	57	22
2005–2020	15	35	41

(Source: Author, 2020).

3.3. Policies, Population and Economy

Based on mapping and statistical results, it has been noted that themes have been repeating themselves. The study variables, i.e., population, policies and economy, have been influencing each other. It has been observed that between 1967 and 1994, that displacement of architectural heritage buildings was not directly impacted by population increase or economy but rather by policies. Since Tanzania was under a socialist leadership from 1961 to 1985, the guiding policy of socialism and

self-reliance led to the formulation of the Building Act 1972, which nationalized private properties in the study area. This discouraged private investment in housing or factories as many private individuals stopped building. The speed of urbanization decreased following apprehension to develop the real estate, because of fear of losing properties as it had happened in 1972. The policy also led to a decrease of population in Dar es Salaam CBD since people were required to live in socialist villages. Displacement of buildings and construction of new ones was not left to the private sector but rather to corporations, which were formed under the same policy of real estate development. Most new buildings in the study area were built by corporations such as NHC, NIC, postal authority, corporate banks, and the government itself.

It has been noted that in the period between 1994 and 2005,displacement of buildings was influenced by policies and urban economy which determined the type and size of the urban population. Due to shift from a command economy to a free market economy by trade liberalization and privatization,Ushirika (Corporations) and the private sector acquired buildings and plots in the city center and the fear of building had decreased hence new materials, technology, design styles and designers were imported, unlimited, to the country. Some of the properties which had been nationalized were reclaimed by their owners. Corporations such as NHC increased its number of properties. This time, builders were the government itself, corporations, and the private sector. Displacement of rich individuals was so radical because the policy favored them. Hence, policies and the urban economy seemed to control the changes that took place on architectural heritage.

Between 2005 and 2020, central area redevelopment plan was the major influence for changes. It lacked protective measures of architectural heritage as its focus was to cater for the then existing and future demands for infrastructure services, daytime population; the streets had become narrower and could not accommodate the population, increasing demands for commercial and office spaces to have corporate buildings of many storeys as possible. The policies of privatization and liberation had been translated into a master plan. The guiding policy for development of Dar es Salaam CBD was the Central Area Redevelopment Plan 2000, which was used by planners and developers[27]. Since its implementation in 2002, it has completely changed the built form to an uneven skyline which seems to contradict development conditions. The current skyline of Dar es Salaam CBD is a result of the Central Area Redevelopment Plan, 2000.

4. Conclusions and Policy Implication

4.1. Conclusions

This study was derived from the curiosity of the expense that architectural heritage incurs to accommodate pressure usually exerted by urbanization. It sought to explore the trend of urbanization and its corresponding implications on architectural heritage and explore how the two can co-exist. The findings have demonstrated that urbanization is fuelled by factors such as population, policies, and economy. In the hypothesis they were noted as separate variables, but through the investigation conducted on this study they have been shown to be interlinked as they

influence each. For instance, policies have been seen to influence population increase, as Ujamaa (socialism) policy led to a decrease in the number of people in the CBD, which as a result, few changes were noticed as far as architectural heritage was concerned. Population in the city has also affected policies on building uses such as allowing high rise buildings to accommodate high populations after demolition of architectural heritage buildings. Hence, the results of their influences have been documented together.

This study has also proven the importance of contextual studies as noted by Moudon [20] on the dynamic nature of cities as driven by varying social-economic forces such as urbanization. In this way, it becomes easier to address the challenges that may arise using contextualized rather than generic approaches. Though international organizations such as UNESCO and ICOMOS have come up with recommendations for conservation of architectural heritage, if these are not contextualized, they may not be applicable in some contexts.

4.2. Policy Implication

The Historic Urban Landscape [28]proposes that, to balance between architectural heritage conservation and urbanization, one could use the landscape approach with the goal to ensure sustainable development in the city on a wider context. Providing new functions such as service-oriented activities for example ecotourism in this context can provide social and economic benefits and provide accommodation in cities. This has been seen from the trend between 1995 and 2020 whereby the changes in building fabric was influenced by its ability to generate income, hence balancing with the economy. Further, planning of the city should be extended from being monocentric to being polycentric. Harmonious activities to ensure livelihood should be left to the old part of the city, and other activities should be kept in the new city. For example, in India, there is Old Delhi and New Delhi; in Zanzibar, there is Stone Town and New town, both of which coexist with harmonious functions. The growth of the city can be seen through this manner. Activities like wholesale business should be carried out at the CBD and create other markets at the periphery of the city and leave the CBD for wholesale (if necessary) because demand is what calls for new buildings to be built on sites that harbored old buildings. Regarding important decisions and policies concerning architectural heritage buildings and streets, a bottom-up strategy is suggested in understanding users and their needs. This would enable the design of policies which are friendly and owned by users themselves. Also, participatory approach policies involving owners and government to be formulated to protect few remaining buildings.The study revealed lack of coordination between different stakeholders involved in conservation of architectural heritage and urban planning, which has led to generation of contradicting policies on both sides. Hence the study suggests cooperation from both sides in decisions and plans concerning land and building uses. Further, it was revealed in the study about the lack of a clear list of buildings under conservation which has led to contradiction on conservation issues. The responsible ministries, authorities and stakeholders are advised to coordinate together and provide a clear list of buildings to avoid contradictions.

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References

1. UnitedNations,DepartmentofEconomicandSocialAffairs,PopulationDivision. *World Population Prospects 2019: Highlights* (ST/ESA/SER.A/423);UnitedNations,DepartmentofEconomicandSocialAffairs,PopulationDivision:NewYork,NY,USA,2019.
2. Amar,J.H.N.ConservationofCulturalBuiltHeritage:AnInvestigationofStakeholderPerceptionsinAustraliaandTanzania.Ph.D.Thesis,BondUniversity,Robina,Australia,2017.
3. Worrall,L.;Colenbrander,S.;Palmer,I.;Makene,F.;Mushi,D.;Mwijage,J.;Martine,M.;Godfrey,N. *Better Urban Growth in Tanzania: Preliminary Exploration of the Opportunities and Challenges*;CoalitionforUrbanTransitions:London,UK;Washington,DC,USA,2017. Availableonline:http://newclimateeconomy.net/content/cities-working-papers(accessedon 28 December 2019).
4. Zhang,Y.;Zhang,H.;Sun,Z.Effectsofurbangrowthonarchitecturalheritage:ThecaseofBuddhistmonasteriesintheQinghai-TibetPlateau.*Sustainability***2018**, *10*,1593.
5. Rodwell,D.*Conservation and Sustainability in Historic Cities*;BlackwellPubl.:Malden,MA,USA,2007.
6. National Bureau of Statistics. *2002 Population and Housing Census: Dar es Salaam Regional Profile*;President'sOfficePlanningandPrivatization:DaresSalaam,Tanzania,2004;VolumeVI.
7. National Bureau of Statistics. *2012 Population and Housing Census: Population Distribution by Administrative Units*;President'sOfficePlanningandPrivatization:DaresSalaam,Tanzania,2013;VolumeI.
8. Takwimu-Bureau of Statistics. *1988 Population Census Regional Profile*;President'sOfficePlanningCommission:DaresSalaam,Tanzania,1989.
9. Bureau of Statistics. *1978 Population Census: Population by Age and Sex for Villages/Wards and Urban Areas*;MinistryofPlanningandEconomicAffairs:DaresSalaam,Tanzania,1981;VolumeII.
10. Kigadye,F.ArchitecturalConservationinRapidlyUrbanizingCities:TheCaseofDaresSalaam,Tanzania», *Les Cahiers d'Afrique de l'Est/The East African Review* [En-ligne],49|2014.Availableonline:http://journals.openedition.org/eastafrica/342(accessedon 30 December 2019).
11. Chami,F. *The Tanzanian Coast in the First Millennium AD*:SocietasArchaeologicaUpsaliensis:Uppsala,Sweden,1994
12. Iliffe,J. *A Modern History of Tanganyika*;CambridgeUniversityPress:Cambridge,UK,1979.
13. Brennan,J.R.;Burton,A.Theemergingmetropolis:AhistoryofDaresSalaam,circa1862-2000.In*Dar es Salaam: Histories from an Emerging African Metropo-*

lis;Brennan,J.R.,Burton,A.,Lawi,Y.,Eds.;AfricanBooksCollective:Oxford,UK,2007;pp.13–75.Ava ilableonline:https://muse.jhu.edu/chapter/527315(accessedon 23 December 2019).
14. Burton,A. *African Underclass: Urbanization, Crime, and Colonial Order in Dar es Salaam*:OxfordUniversityPress:Oxford,UK,2005.
15. Markes,S.(Ed.)*Street Level: Drawings and Creative Writing Iinspired by the Cultural and Architectural Heritage of Dar es Salaam*;MkukinaNyota:DaresSalaam,Tanzania,2011.
16. Seifert,A.(Ed.) *Global City-Local Identity?*;MkukinaNyota:DaresSalaam,Tanzania,2012.
17. Kiruthiga,K.;Thirumaran,K.Effectsofurbanizationonhistoricalheritagebuildingsin Kombakonam.*Front. Archit. Res.* **2019**, *8*,94–105.
18. DaresSalaamCentreforArchitecturalHeritage(DARCH). *History of Dar es Salaam*;[ExhibitionPanels]ExhibitedatOldBomabuilding2016-Present;DARCH:DarEsSalaam,Tanz ania,2017.
19. FloresdeLeon,R.M.ImplicationsofCulturalHeritageinUrbanRegeneration:TheCBDOFDaresSalaam.Master' sThesis,ArdhiUniversity,DaresSalaam,Tanzania,2018.
20. Moudon,A.Urban morphologyasanemerginginter disciplinary field. *Urban Morphol.* **1997**, *1*,3–10.
21. Whitehand,J.Britishurbanmorphology:TheConzeantradition. *Urban Morphol.* **2001**, *5*,103–109.
22. Gauthier,P.;Gilliland,J.Mappingurbanmorphology:Aclassificationschemeforinterpretingcontributionstot hestudyofurbanform. *Urban Morphol.* **2006**, *10*,41–50.
23. Yin,R.K. *Case Study Research: Design and Methods*;SagePublications:ThousandOaks,CA,USA,2011.
24. Kothari,C. *Research Methodology: Methods and Techniques*,2nded.;NewAgeInternational:NewDelhi,India,2004.
25. Seifert,A.;Moon,K. *Dar es Salaam: A History of Urban Space and Architecture*;MkukinaNyota:DaresSalaam,Tanzania,2017.
26. Sykes,L.;Waide,U. *Dar es Salaam. A Dozen Drives Around the City*;MkukinaNyota:DaresSalaam,Tanzania,1997.
27. DirectorateofHumanSettlementsDevelopment. *Dar es Salaam Central Area Redevelopment Plan*;MinistryofLandandHumanSettlements:DaresSalaam,Tanzania,2002.
28. UNESCO.*Recommendation on the Historic Urban Landscape, Including a Glossary of Definitions*;UNESCO:Paris,France,2011.

Cost Implication of Renovation Uncertainties in Conservation of Historic Buildings - The Heritage Stone Town of Zanzibar

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Keywords: Conservation Uncertainty, Cost, Historic buildings, Zanzibar Stone Town.

1. INTRODUCTION

The nature of historic buildings renders their renovation challenging when compared to those of non historic structures. These challenges come from environment surrounding historic districts as much as they come from deterioration of their building fabrics which are left to crumble due to lack of long term repairs. Absence of such repairs is a common phenomenon among buildings of these districts and often repairs are conducted on compelling reasons not on regular, planned basis. Several reasons contribute to the phenomenon but finance topples the list.

With the exception of few historic revitalizations from specific interest groups, most renovations are prompted by commercial reasons; tourism being a major driving force in maintenance of historic buildings. For example, in the historic Stone Town of Zanzibar (STZ) many of the renovations result to conversion of the buildings into hotel facilities. The number of hotels has increased dramatically and may disproportionate residential structures in the future. This contributes to undesirable gentrification of the poor local inhabitants and consequently unbalanced conservation of the cultural heritage.

As deterioration of a historic building advances, renovation becomes complicated and may, at times leads to loss of the heritage building. The challenges of renovating a highly deteriorating building include difficulty to accurately predict the magnitude of renovation works required to keep the building healthy. This is because many of the renovation requirements remain concealed with in building structures and fabric and the actual scope of the works unfolds as renovation progresses. Therefore, Smith (2005) describes the preparation of realistic renovation budget for historic buildings as complex and difficult endeavor which often ends up in substantial variations.

According to the author's experience from renovations of buildings in the STZ, the extent of the revealing works is sometimes so considerable that the scope could be double that estimated at the start of a project. Although it is customary for construction cost estimators to add up a contingency amount of 5% to 20% to cover the unforeseen works, such an increase in scope is far greater to be covered by a standard provision of the contingency sum. Thus, the concept of contingency sum is less applicable to historic renovations.
Smooth renovation of the buildings is therefore hard to predict. Consequently, the inherent nature of uncertainty of these renovations made people to perceive the upkeep of historic buildings as a burden and an expensive affair. Therefore, financiers and general building contractors tend to stay away from

these works. They like, as a short cut, propose demolition of the heritage buildings for new and modern structures. When they are involved in tendering, they keep their prices incredibly high to avert the cost risks. An inflated tender figure should be expected from these works.

Regardless, heritage buildings are important legacies of "all mankind" (UNESCO, 1972), it is imperative that we sustain them. Sustenance could mean in one way, dealing with impediments to their preservation. Renovation uncertainties is one of the impediments. Therefore, it is important to understand the nature of these uncertainties to assist in effective renovation and management of our historic resources. In that regard, this article embarks on a journey through some prominent renovation projects in the World Heritage STZ to document some uncertain events to renovation projects. Understanding these events hopes to help in setting up proper conservation plans, in particular, preparing renovation budgets in a greater degree accuracy.

2. STUDY METHODOLOGY

A case study approach was used to solicit information. Distinct renovation projects were visited. Multiple case studies are applauded for their ability to explore detailed research information that can be generalized and applied to similar situations (Simons, 2009). Stone Town Conservation and Development Authority (STCDA), a custodian responsible for monitoring the old town, was consulted for potential list of renovation projects. The STCDA oversees the management of the historic town. It approves and administers all renovation projects in the town, especially those with significant alterations and structural repairs. To obtain variety of projects that could feature several uncertainties, criteria such as project size, location and building type were thought desirable for selecting the cases. However, upon thoughtful discussion with STCDA several other cases were recommended for inclusion, in addition to the criteria. This made easier to quickly locate cases with merit, which might have been overlooked by the said criteria.

To obtain rich information, projects carried out by both formal and informal contractors were considered. Informal contractors are individuals or knowledgeable group of builders who carry out conservation projects out of formal contracts. They are often engaged by private clients. These people have oral records of works and events. The key questions asked were: What was unforeseen during project preparation? How the unforeseen issues contributed to the cost of the renovations? For the sake of this conference conservation uncertainties and their cost implications of four (4) cases are presented.

3. CASE STUDIES

Case Study No. 1: Renovation of House No. 13

The house is located at Vuga Street behind the High Court building (Fig.1). It is a two (2) storey structure occupying 160 square meters. Its age is about 100 years. It had major repairs in 1920 by

Sinclair; a Marine Engineer who designed and construct several monuments in the Stone Town. The original construction of this house employed traditional materials; rubble stone walls and mangrove poles supporting floor decks, typical of the STZ buildings. The original owner could not be obtained but several other people had occupied the building. It was used as a German Consulate and quite recently before substantial renovation works it hosted Egyptian Consulate. It is now owned by an insurance company. The 1920 renovation introduce dramatic change to the building. Lime and pebbles concrete with wire mesh replaced the stone and *boriti* construction. It also introduced I-beams to provide larger spans. Hardwood timber was used to inclose the I-beams but was now found decayed.

Figure 1: House No. 13 before recent renovations (Curtesy of Abuu Shani)

At the outset a survey was carried out to unveil the extent of renovations and a Consultant prepared a renovation plan. Nonetheless, as is the case of most renovations, it is evident that his proposal fall short of accurate depiction of the real situation. The building had deteriorated significantly from inside than what the survey actually indicated although it looked quite fine from outside. Based on the plan, the renovations were estimated to cost some 372 million shillings to cater for structural, wall, and roof repairs.

The structural repairs take up major part of conservation projects and is perhaps the most difficult, uncertain and a leading cost escalating item. Conservation projects often start with structural stabilization. Some structural defects may be detected from vivid cracks on walls, beams or columns. However, several are found after pealing the old plaster or as the work progresses; a situation which goes unnoticed during superficial surveys. Some may be created as a result of disturbing other elements. Therefore, efforts need to concentrate on stabilization issues wherever found. Thus, financial allocation depends on the situation in hand than the conventional stage valuation as reflected in Bills of Quantity (BoQ).

As the Contractor embarked on the works, Consultant's proposals seemed impractical. He underestimated the structural stability of the building. Something unusual occurred during renovation which caused a tag of war between the Contractor, Consultant, and Client. It also shaped the course that this project had to follow. The floor slabs had deteriorated to the extent that no one noticed the decay of the structural *boriti* and wire mesh installed therein. The slab was therefore unable to hold the imposed load at some areas, unnoticeable. As a result a owner's staff walking on it had his foot suddenly punched through the slab up to the head. He had to be pulled out.

The event above prompted to rethink the renovation plan and used as a proof of deterioration. Although the plan proposed minor repair to the floor, the unveiling situation demanded structural replacement of the entire building floors (Fig. 2). A team work approach was used to share experience on how to redesign the floors based on conservation rules, buildability issues, meeting safety standards, and yet affordable to the Client. In most cases, the team is forced to provide new solutions to suit the situation. A consensus was reached, however, although the most effective option was chosen, the solution contributed significantly to the overall project cost which went from 372 million to some 950 million shillings; an addition of 61% to the initial budgeted cost.

Figure 2: Replacement of structural floor slab during renovations (Curtesy of Abuu Shani).

Walls of the historic buildings are made up of rubble stones bonded with lime mortar. Owing to its acidic nature, with time the lime causes deterioration of steel members. House no. 13 employed I-beam sections taken from the remains of the uprooted Bububu Railway to provide longer free spans of over 3 meters, than what the mangrove poles would actually do. The beams rest on and are anchored into the rubble walls. Opened beam ends revealed unprecedented rust threatening its anchorage and further complicated the structural repairs. Regardless, worth noting is that what the Consultant condemned was found less serious by Contractor, in particular the laborers, than what he ignored.

Lessons from renovation of House No. 13

(i) Construction technology varies within STZ historic buildings. It is never the same for all the buildings. Some buildings are completely traditional. Others combine both traditional and modern materials. Understanding which material is used for a particular building is crucial before proposing any renovations.

(ii) Building surveys are just bases for renovations but can not be relied as accurate depiction of a deteriorating situation; no matter how exhaustive were performed. Surveys are unable to depict internal deterioration. In most cases they are superficial. Therefore, surveys establish initial demands which may change during rehabilitation works. This necessitate revision of building quantities as renovation progresses. Variations are almost inevitable in conservation works.

(iii) Structural stabilization/repairs is one of the major cost items in conservation projects.

(iv) Generally, the older the building the complex the renovations. However, it also depends on past building usage, construction methods, materials employed and how often the renovations were performed in the past. Anyway, understanding the age is important to predict renovation complexity and uncertainties.

(v) Sequence of works differs from normal construction. Stabilization is often done first. Works may also go forth and back. A work program may become invalid and difficult to follow. Financial projection plans may not be applicable.

(vi) Required approach: Costing as you build vis-a-vis the normal construction of Design & costing. Active participation of Clerk of work important. This make us to re-think the type of contract. May be: cost + %age fee contracts can distribute the risks fairly to Client and Contractor.

(vii) From Ditto: Provision of Contingency amount does not work in these projects.

(viii) Adequate knowledge of construction materials, methods, and possible uncertainties is required by Quantity Surveyor (QS) estimating renovation cost and budget.

(ix) Construction methods for conservation projects are situation dependent. How should the building be supported, extent of temporary works, which kind of materials to be used, etc. would be determined by the situation in hand. In this scenario accurate cost estimate is hard to determine at the project outset.

(x) Conservation projects are prone to conflicts because of cost uncertainty. They may also suffer from huge cost overruns.

(xi) A teamwork approach best suits renovation projects even to include masons and laborers than the conventional way of Consultant's dominance.

Case Study No. 2: Renovation of **House of Wonders (Beit-el-Ajaib)**

Constructed along the sea promenade overlooking Forodhani Gardens in 1883 (139 years ago) by Sultan Baragash bin Said, the House of Wonders (Fig. 3) is the most imposing structure in the STZ. It is so named party because of its grand size but also due to the fact that it is the first building of its kind in sub-saharan Africa. By the time it was installed with electricity, tap water, and an elevator. The building consists of wide verandah surrounding the inner core. The ground floor is 7 meters high while the first and second floors are respectively 6.8, and 6.5 meters. House of Wonders was used as a ceremonial palace during the Sultan's reign.

Figure 3: House of Wonders before collapse (left) and after recent collapse (right) (Curtesy of Rao Jodha).

The construction technology used is unique. A combination of modern and traditional materials in a skillful way characterizes its construction. Massive lime mortar masonry wall of ranging from 1 to 1.5 meters wide provide adequate recesses for doors and windows. The wall size decreases in the upper floors reaching a thickness of 1.2 meters at the second floor. The structure is supported by cast iron hollow columns of ionic architectural style imported from Europe. These columns hold the floor decks of varying materials. Astonishingly, it is not clear why Sinclair, the Marine Engineer and the Architect of this building, opted to showcase slab of non-uniform materials, which is very uncommon indeed in STZ. Again this testify the point made above that construction technology of the buildings in the STZ is never the same. It was during the 2021 partial collapse of the building when its anatomy was revealed. The first floor slab for example, was divided into bays with varying layers of structural and finishing materials. See Fig. 4. Some bays used:

I-section + Timber plants + Mud deck + Marble finish
I-section + Timber planks + Corrugated iron sheet + Concrete + Marble finish
I-section + Timber planks + Corrugated iron sheet + Concrete + Floor screed finish
I-section + Wire mesh + Concrete
I-section + bottom re-bar + Concrete

Figure 4: A deteriorated slab of a walkway in the House of Wonders exposing its only bottom reinforcements (Author).

Interestingly, all were skillfully blended and finished at the same floor level. The hard tick wooden spacious spiral staircases that span between floors are marvels of high tech timber construction. The doors are also astonishing as they were curved with utmost skills and highly decorated with intricate flora patterns and golden Quranic inscriptions. It appears that the art of door carving reached its zenith in Zanzibar House of Wonders and are to be found no where else on the earth. Zanzibar doors are admired worldwide that almost a third of all visitors to STZ fall in love with the doors (Mwalimu, 1988).

Unfortunately, the House of Wonders was left without repair for a long time. Its back side partly collapsed in 2012 followed by it western wing in 2015. These warning collapses were signs of a more serious emanating fall that in 2021 the larger front portion and inner core including its splendid observatory tower went down in a surprise (Fig. 5). Sadly its largest front door (Fig. 6) astonishing every visitor was completely destroyed and the supporting columns were overwhelmed by the heavy rubble masses that they were also broken into pieces.

Figure 5: The House of Wonders after 2021 collapses (Curtesy of Abuu Shani).

This great heritage asset served as a museum before it collapsed and used to receive average of 300 visitors a day. Each visitor pays US$ 10 entrance fee. Therefore, at least US$ 3,000 was collected daily. This adds up to US$ 90,000 (207,000,000/-) per month. Truly great loss to the government! Therefore, historic assets can generate income to suffice their upkeep if well managed.

Before the recent collapses, Ministry of Heritage in the Sultanate of Oman showed interest in the renovation of the building and allocated some US$ 6,000 (1.38 billion shillings) for repairs. A management consultant was selected to facilitate the conservation of the building and coordinate the project with Zanzibar Government. The consultant employed a conservation consultant, a foreign company to undertake building surveys and initiate a conservation plan. A cost consultant, also a foreign firm, was then called upon to prepare renovation budget.

It was unfortunate to learn that the renovation budget was prepared without visiting the site. It based mainly on the conservation plan and site photographs, which in reality do not solicit all cost related demands. Tender documents were prepared from the plans including BoQ (Bills of Quantities). Five (5) contractors were invited on selective basis of which only two (2) returned the bids. Their tender figures were US$ 15,000 and US$ 5,000. The consultant cost estimate could not be obtained for comparison. However, when asked, the highest bidder, who seemed to be more experienced with historic renovations notified that after visiting the building he found lots of uncertain issues and the renovation plan did not accurately captured the existing state of disrepair. Therefore, he opted to maximize the risks by providing higher bid.

The Consultant intended to award the lowest bidder with the price of US$ 5,000 probably because it is close to Client's budget of US$ 6,000. During negotiation, the bidder demanded a waiver of several

aspects of the contract such as advance payment guarantee and performance bond but the STCDA as an implementing partner refused.

Figure 6: The lost entrance door of the House of Wonders (www.dreamstime.com).

An examination of the BoQ found that the bidder front-loaded many of the items. And regrettably the Consultant provided mostly lump sum items than rated items from which variations will be difficult to monitor during implementation. Such works are more prone to changes that the rates are highly usable. It can be inferred from these acts that the cost consultant might have been less competent or at least irresponsible in the conservation works and took the works rather lightly.

The fact that the Contractor never stayed premaritally at the site and not exercising his duties diligently made the STCDA and the Consultant concerned. One reason could be the unattractive profit vis-a-vis work complexity. After taking over the site and starting temporary support works the Contractor stayed longer without progress. This induced structural instability and lead to the collapse of the front part and section of the inner core (See Fig. 5). There is a tendency that historic buildings can stay longer without renovation but once intervention is made it has to be progressive and monitored. Anything arising from intervention has to be addressed promptly otherwise it may have irreversible consequences.

The overwhelming pressure from the collapse made the Contractor quit without notice. Nonetheless, the collapse exposed useful information as to the previous plan and budget. First, the construction technology of the building was not properly understood. For example, there is a hardwood wall plate throughout the wall. This plate supports steel beams that bear the floor deck. Portions of the plate decayed. Thus, it is impossible to stabilize the structure without the knowledge of such plate. To replace the wall plate needs special care and proper methods. Hence, adding up significantly to the budget. Second, the window lintel is also from hardwood though looks like concrete the way they are finished. Decay of some lintels was observed at wall joints. Again, to replace the lintel needs care with adequate temporary supports.

Temporary support is a major cost item after structural stabilization. This is attested by the cost of such supports gathered from three buildings in the town. For example: temporary support to the Palace Museum, also in poor condition and fear of collapse, along seafront at Forodhani costed US$ 120,000 (TShs. 276,000,000). Another nearby seafront Grand Building was supported by US$ 300,000 (TShs. 690,000,000). The House of Wonders itself was supported by TShs. 500,000 as an immediate measure to stop from progressive collapses. The support materials vary from timber to steel. See Fig. 7 below.

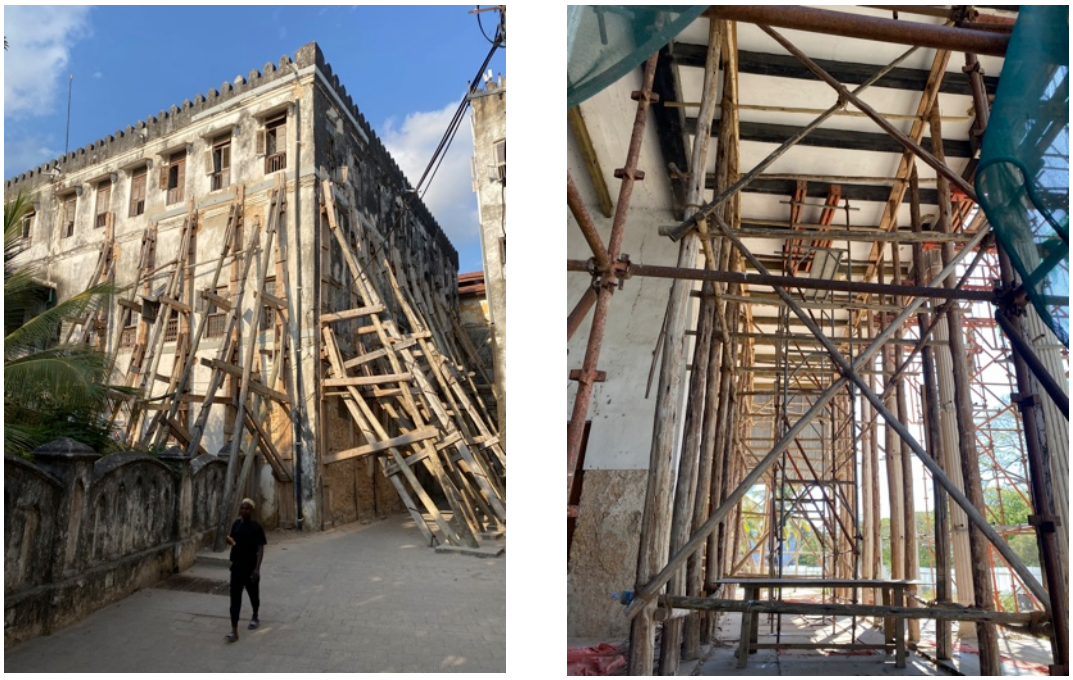

Figure 7: Heavy temporary timber support from Palace Museum (left) and steel support in House of Wonders (right) (Author)

Further, soil investigation revealed that water table is at the building is high and because of the surrounding sea environment the water salinity is high. Therefore, a new item of chemical soil stabilization around the foundation should be introduced in the BoQ. Due to the building perimeter the item is significant. The work has to be subcontracted to a Specialist Contractor, possibly from abroad. Again, a cost escalating item.

Major revisions to the BoQ were inevitable for the conservation to proceed successfully after the 2021 collapses of which now includes reconstruction of the collapsed part. The reconstruction would need fabrication of cast iron columns no longer in the market, to mention a few. Therefore, it is to be treated as a special order. Original marble floor tiles are more expensive than before. A more elaborate and detailed BoQ was then prepared.

Lesson from previous contract made the STCDA and the Consultant rethink their approach to solicit new Contractor. At the outset, local contractors from Zanzibar were approached but they refused from technical and financial grounds. Later on four (4) contractors were approached in the Mainland Tanzania but one of them refused. The remaining three (3) had their QS stayed at site for 3 months in the course of preparing their bids. One bidder hired a conservation expert from India to assist in detail cost preparation. The bidders' prices were US$ 61 million, US$ 43, and US$ 37. This time lowest price is 7 folds that of previous unsuccessful contract. It is therefore clear that the previous contract would not have achieved conservation objectives of the building.

An interesting aspect of tendering in this project is that the financier, Omani Ministry of Heritage, opted not to prepare Consultant cost estimate for fear of collusion. The collusion might have consequences not in the aspect of coming closer to the budget but the financier wanted an accurate depiction of the cost from Contractors' practical perspective. Thereafter, the Contractor will be selected on the cost merit but in relation to experience and sound judgement of his methodology, important for this kind of project. If this is the case, perhaps a better approach is to think about other types of contracts, as previously suggested in Case No. 1 above. It will give actual renovation costs and reduce the risk of project completion by the Contractor, yet achieve best value of money through realizing actual cost of construction. In this standard, peculiarity of conservation projects demands a break away from traditional form of construction contracts.

A quick cost estimating approach based on experience in historic renovations may be derived to guide computation of preliminary cost plans. Based on the nature, age and past renovations, an estimate may be produced in two (2) ways. For example for plaster works:

(i) *Pessimistic Estimate*: Repair all the plaster (100% repair).
(ii) *Optimistic Estimate*: Remove and apply 60% new plaster (in case undesirable cement plaster was used in past renovations or the plaster has severely deteriorated) and 40% repair of existing plaster.

The same approach could be adopted for replacing *boriti* poles, structural stabilization, timber decks and the like.

Reconstruction of the masonry walls of this building thickness requires ample time. First, the wall is to be build in stages of not exceeding say, 2.5 meters high. And before any load is applied the wall has to stay for 2 weeks to dry and gain the desired strength. That is to say, conservation projects

generally demands more time compared to normal construction. The time demand comes from the quality requirements and unfolding conditions which sometimes need research and discussion among project members before a decision is made. The more time is spent the higher would be the labour and other overhead costs. Preparation of construction schedule should foresee such events and frequently contingency plans have to be put in place to meet the time schedule.

Lessons from Renovation of House of Wonders

(i) Renovation expenses increase with lack of repairs as the Swahili saying goes "*Usipoziba ufa utajenga ukuta*" and this is what happened to the House of Wonders.

(ii) Involvement of local companies (Consultants & Contractors) in serious conservation works is minimal. This is a potential area for investment.

(iii) To obtain a realistic conservation budget the QS should not only visit the site but should stay and interact with it adequately. Lots of potential cost related issues are revealed from building history and discussion with occupants or local builders. Vast information has to be collected in addition to the conservation drawings to aid this exercise. Sometimes, building parts are to be opened to reveal suspected decays.

(iv) Due to higher risks in renovation projects, it is not surprising to receive excessively high bid prices compared to that of conventional construction.

(v) Unexperienced QS should not engage in estimating renovation projects because the risk of producing unrealistic cost estimate is too high.

(vi) Conservation works need to be taken more serious and follow-up of even minor issues be made because they can have greater impact to the project.

(vii) Heritages have lots of stakeholders; society, government, organizations, etc. The pressure of mis-performance is great. Loss of reputation and dismissal by public is probable.

(viii) One of the major items in the conservation works is that of providing temporary support. It is not only major but also the first to be done. Almost all works have to be supported before repair is performed. For buildings with high floor to ceiling heights like the House of Wonders the cost becomes even higher.

(ix) Creativity is required in establishing quantities and cost estimates.

Case No. 3: Renovation of House No. 351 at Gizenga street.

This is a two-storey (G+2) residential building in traditional construction. It was built by a rich elite family of Zanzibar prosperous times but left the country during 1964 revolution. The building was deserted and left unattended for long time except the shop fronts that open to Gizenga Street; one of the narrow winding but famous streets behind the Old Fort. Most of the shops along this street are lucrative. Therefore, they are renovated and rented to tourist curio business. With the exception of the shops and rooms above them, the rest of the building largely deteriorated.

The building Client engaged a personal Consultant to survey and prepare renovation plan. The initial cost estimate for the renovations was estimated to TShs. 175 million. However, as is the case of several projects of this kind in the STZ the estimate overrun by almost 33%. The actual final value of the works was TShs. 263 million.

Major structural repairs performed to this building was replacement of rotten wooden lintel. The threat posed by this exercise was settlement of the walls. Therefore, the walls were heavily supported. No efforts were spared for the supports since any unstable movement would have severe consequences including reconstruction of part or the whole structure.

Walls deteriorated from within, a condition invisible before intervention. When opened, they were found bulging and swelling. A proper renovation for the walls of this nature was to hack the entire plaster until the structural stones are exposed. But, again extra care is required not to damage wall stability. So, the process has to be slow and careful. The mortar covering the stone is applied in three (3) coats (Fig.8). The first coat is a mortar binding the stones together to form a composite wall. The second coat is a layer applied as plaster which varies in thickness depending upon roughness of the stone. The thickness can not be determined in certainty before the construction. It varies between 75 and 100 millimeter thick and is traditionally known as *mtomo*, which is basically a treatment of small pebbles on the layers. The QS needs to explain them in greater detail. After application, this layer completely cover the rubble stones. The third and final coat is the finishing layer of which its thickness is controllable; normally 10 millimeter. It is therefore difficult to accurately determine the volume of mortar required to fill the stone gaps and provide a level surface for the finishing layer.

Despite the difficulty in ascertaining the exact amount of the mortar, renovations are measured in square meters taking into consideration of the complexity when pricing. In this project the Contractor charged 65,000/- per square meter to repair the plaster. The rate includes knocking existing plaster and application of the binder and the other two coats. Worth noting regarding the traditional lime plaster is the time required for the lime to develop strength. The mortar has to stay for two weeks before it is applied. This is a quality requirement to be specified by the QS.

Renovations result into bulk of waste materials. Therefore, as the plaster is knocked down, tons of old mortar are produced. Disposal of waste materials constitute another major part of renovation projects. The cost of the part is exacerbated by the fact that the streets of the STZ are narrow and winding to allow lorries to pass through. The town constitutes mainly pedestrian alleys. Hence, disposal has to

make use of carts (*rikwama*) and has to be carried out in two stages. First from the building to temporary heaps along the main road. Then from the main road loaded into lorries to final disposal point. This double handling of waste materials is a matter of cost concern. Nonetheless, the cost concern in double handling is not only for the waste but also any material supplied to the site. Thus, the QS has to put into consideration additional cost of supply and removal. The cost of disposal from House No. 351 was 10% of the project value. This is probably higher than in the normal construction works.

Fig. 8: Layers of plaster work in traditional stone construction (Author)

Lessons from Renovation of House No. 351 at Gazing street.

(i) Despite higher cost of renovations, Clients continue to renovate because of the lucrative tourism business. Tourism is a major driving force of renovation in historic areas.

(ii) Temporary support works depends on a case in question. Its magnitude can not be accurately estimated at the beginning because its hard to design. It has to be carried out to the satisfaction of the Contractor that the building is now stable and intervention won't harm the building.

(iii) Care needs to exercised with demands a lot of time.

(iv) Renovation is a risky undertaking. It is recommended to provide building insurance cover. Nonetheless, rarely the cover is provided.

(v) A cost sense is required when pricing some items which can not be ascertained accurately. Rates can be increased a bit to take care of this aspect.

(vi) Double handling of materials is the norm which increases the cost of material supply and disposal.

Case No. 4: Renovation of Bharmal building at Creek Road

Bharmal building is an architectural masterpiece of the first half of the 20th century Zanzibar. Built in 1922 and completed in 1923 at Malindi quarter, the building stands on what was the edge of the creek that divided the historic Stone Town and its other side, famous as Ng'ambo. The building was separated from the creek with a narrow path and a bank protecting it from high tides. The creek was gradually reclaimed between 1915 and 1960 to form what is today known as the Creek Road (Fig. 9).

Fig. 9: Bharmal building appear as a white washed landmark in the far right side of this photo taken in mid 1950's, before complete reclamation of the creek was achieved. (Source: Zanzibar National Archives: AB 26/9)

The construction of Bharmal building was commissioned by a rich Indian merchant named after Mohamedbhai Sheikh Hoosenbhai who belongs to a Bohora family. The grand Bharmal building, now ZMC (Zanzibar Municipal Council) headquarter (Fig. 10), was originally designed as a residential structure. However, it largely served public functions. The building functioned as a dwelling and a 'godown' in 1936. Bharmal building was constructed by massive rubble stone walls. It is among few buildings in the town originally roofed with clay tiles. This can be attributed to the wealth of the owner and the technology of the time at which the building was erected. Most structures in the town were covered by corrugated iron sheets that often rust and leak due to the surrounding salty atmosphere from the near by sea.

It has two (2) floors (G+1). The ground floor has six (6) rooms and a toilet while the first floor had ten (10) rooms, a kitchen. The ground floor covers an area of 654 m2. The height of the first and second floor is 4.5 m and 4.2 m respectively. Bharmal building features amalgam architecture of Indian taste with flavors of Arabic and European styles. This oriental design has borrowed many of the features of Romanesque architecture composed in a dramatic style. It is the work of Zanzibar's famous architect of the 19th – 20th century, J.H. Sinclair.

Fig. 10: Front View of Bharmal building (Author)

The Bharmal building has undergone several renovations in the past. The kind of renovation seems to be limited to patching the plasterwork, floor finish, replacement of rotten elements, painting, and decoration. According to existing archival rent records housed in the building, major structural overhaul may not have been conducted over its nearly 90 years of age. Renovations were also ad-hoc rather than planned. Perhaps the most comprehensive renovation of all is that carried out by a project financed by UN-Habitat between 1989 and 1993. That time there were no contractors specialized in the works therefore, a team of expert architects and craftsmen from the Stone Town Authority, now The Stone Town Conservation & Development of Authority (STCDA) took part in the renovations.

In 2012, the World Bank financed another renovation of the building as part of Zanzibar Urban Services Project. This was to create better office space for the ZMC of which occupies the building. A Consultant prepared a conditional survey report in August 2012. However, after procurement procedures the actual renovations started in March 2014. It took two (2) years from the survey to construction. A lot might have changed in the building condition during the longer procurement period. And this was observed from the variation of what the survey stipulated and what was actually found. For example, the survey identified some 60 *boriti* that needs replacement, removal of old plaster exposed additional 340 *boriti* must be removed; an increase of 85%. According to project BoQ the rate of replacement of a *boriti* is 34,000/-. Therefore, boriti alone contributed to a variation of 11.6 million shillings. At that time it was not a meager amount.

While the municipal offices evacuated and carpet floor covers removed a huge crack running across the center of symmetry was discovered. Such a crack went unnoticed during the survey as access to the building was restricted by the present use. The work had to stop for a while to pursue the effect of the crack and have the way forward because it was a threatening structural aspect. It took at least 5 months to have this issue resolved. The World Bank demanded explanation as to why the crack was

not detected, what will be the consequences if this is not rectified, and the financial and time implication.

Fortunately, cracks were monitored by the Contractor during renovations. It was observed that they keep expanding while repairs continue. As the building was intervened settlement was likely because one of the wings was pulling out. The same happened to recent renovation of Haile Selasie School along the Creek Road. Settlement is a major threat. The effect of settlement was again observed from The Peace Memorial Museum building along the road. Bharmal building was probably not spared especially because it is located at the beginning of the reclaimed creek. It is very much affected by high tide. Based on the observation, the building age, vibrations from vehicles on the Creek Road and other factors, the World Bank was convinced to undertake structural stabilization before the cosmetic repairs, otherwise the whole cost of renovation would be meaningless.

Stabilization works include tightening strings, water proofing, supporting steel I-columns, underpinning the foundation, construction of vibration stop wall, and repair old public sewer to avert the effect of sea water. The additional cost for stabilizing the structure amount to 435 million shillings.

Another proceeding forced a major change in building materials. The building original roofing covering was Mangalore clay tiles imported from India. Conservation plan had it that the tiles be carefully removed, cleaned, and put back. This was to satisfy conservation regulations to keep the original authentic material. However, upon removal majority of the tiles had their delicate buttons decayed. Therefore, they can not hold on the purlins. Absolute replacement was required. Based on the conservation rule of "treating with the like" clay tiles should be used. Nonetheless, clay tiles are heavy. Therefore, experts recommended to use lighter tiles to relieve the aging building from roof load. Eventually, Fortiza tiles were selected. Contractor's quotation for cleaning and repair of Mangalore tiles was 13.6 million shillings while the new proposal for Fortiza tiles was 67 million. This is an increase of 78% to the cost.

Out of physical renovations the QS may need to rethink the elements of the BoQ. While the items and bill elements currently used in renovation contract documents resemble normal new constructions, there is a need for conservation specific items. For example: an item for monitoring on going renovations which requires continuous checks to finished works. Also, item for scientific experimentation of materials for compatibility with existing materials. Another item is that of preservation of cultural heritage materials such as documents found in historic buildings. Heritage conservation involves keeping buildings and their associated cultural heritage. This is so proposed because valuable documents are lost or destroyed during building renovations. We need to pay specific attention to them. These three are examples of items under an element of conservation.

Lessons from Renovation of Bharmal building

(i) Termly renovations have to follow soon after the survey because decays advance quickly with time. Otherwise, building condition could worsen and the envisaged renovation budget will be insufficient.

(ii) There is a need to establish work items and BoQ elements specific to renovations projects. Principles of measurement of these items should be considered in SMM (Standard Method of Measurement) for building works. Therefore, research is required to solicit conservation specific items and classifying them into bill elements.

(iii) Renovation should not only consider the building alone but also the effect of the surrounding environment.

(iv) Locational factors experienced in other projects can act as a guide to establish renovation demands of a nearby project.

(v) Unveiling renovation demands guide which material is appropriate and what method need to be employed. This necessitate revision of a budget along the project continuum.

(vi) Research is required to solicit conservation specific items and classifying them into bill elements.

4. CONCLUSION

Conservation of historic buildings is an interesting, yet challenging work. The challenges come from uncertainties concealed in the structures which can not be accurately known by the time surveys are conducted. For a Quantity Surveyor this inaccurate understanding of renovation information pose a risk of producing unrealistic conservation cost estimate.

Among unforeseen aspects include real structural condition, amount of temporary work required to support the decaying structure, and extent of repair works. All contribute significantly to project budget. It is also difficult to ascertain work sequence and so affects financial projections. Provision of percentage for contingency amount may not work for these projects because they are characterized by huge cost overruns. It takes more time when renovations have to wait for appropriate decision on suitable methods and materials. Thus, projects often extend their schedule. Time extension has implication to Contractor's overheads.

Cost estimators involved in renovation and conservation projects need intensive knowledge of the buildings in addition to work experience. Further, they have to be creative to establish estimating methods of their own for the situation they come across which differs between projects. There are also work items specific to these projects that estimators have to understand.

Because of the above issues, conservation projects are prone to contractual conflicts. To avert the conflicts building contracts applied need to be well thought out. It was revealed in these cases that a cost + fee contracts may work better in the projects than the traditional rated BoQ contracts.

5. REFERENCES

1. Mwalimu, Mwalimu, A. (ed.), Doors of Zanzibar, 1st ed., HSP Publications, England.
2. Simons, H., (2009), *Case Study Research in Practice*, SAGE Publications Ltd.
3. Smith, J., (2005), *Cost Budgeting in Conservation Management Plans for Heritage Buildings,* Structural Survey, Vol. 23, Issue 2, pp. 101-110.
4. UNESCO (1972), *Convention Concerning the Protection of the World Cultural and Natural Heritage,* Paris.

SOCIAL - ECONOMIC IMPLICATION OF CONSERVATION OF HISTORICAL BUILDINGS IN URBAN AREAS IN TANZANIA

(The Case of Dar es Salaam)

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1. Introduction

This paper aims to describe and analyse academic literature and research reports addressing the social and economic value / implication of conservation of historical buildings in urban area.

An historic building is generally considered to be a building or structure that has some kind of 'historic value', i.e. people in the present are connected to it via past events in some way. This value warrants it being afforded consideration in planning decisions that have to be made concerning it. A building may hold special historic interest because of its importance with respect to a particular historical event or period, or be associated with nationally important people. Alternatively, there might be special historic interest in the building itself, i.e. its construction methods, design, architectural significance, and cultural heritage.

Cultural heritage is a group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time.

Architectural heritage is one of the two components of historical heritage, the other being Archeological heritage. While the latter deals with all the objects that can be studied using archeological methods such as bones, old coins, pottery and tools, the former is about all buildings and structures that have value because of their historical, archaeological, artistic, scientific, social or technical interests. For example, Swahili architecture along the coast tells us something about the Arabic or Islamic influences on local customs. Dar es Salaam features a

number of Arabic, German and English colonial memory sites which range from buildings, statues to open spaces.

Conservation of heritage buildings can be done through maintenance, preservation, restoration, reconstruction and adaptation. Maintenance means the continuous protective care of the fabric, contents and setting of the building while repair involves restoration or reconstruction. Preservation of heritage buildings means maintaining the fabric and form of a building in its existing state and retarding deterioration (Pearson and Sullivan, 1995). The fabric includes all physical materials of the place such as historic places, their contents, associated archaeological deposits, the paintings, earthworks and other buildings elements. The form includes the design, image, facade, style and the original look of the old building.

2. Overview of Dar es Salaam city

Dar es Salaam is the oldest and most populous city in Tanzania, with about 8 million people. It is now a focal point for economic activities in the country. Dar es Salaam hosts manufacturing industries, trade, and other engines of social economic development. Present-day Dar es Salaam city covers about 1,800 km^2. The area with buildings and other infrastructure that qualify as heritage under the 1964 Antiquities Act is 210 km^2 (Lwoga and Mabulla 2013). City expansion and growth continue to occur at the expense of important heritage. In the 1970s and 1980s, several buildings were ignored, abandoned, and threatened, among them significant buildings that started to be demolished beginning in the mid-1990s (Lwoga and Mabulla 2013).

The movement for conserving built heritage in Dar es Salaam was initiated by the Department of Antiquities in the year 1973 when the Minister responsible for Antiquities appointed an ad-hoc committee to study and recommend on the desirability of conserving buildings of historical and architectural significance (Kigadye, 2014).

According to Lwoga, 2013, the awareness of the importance of city's built heritage grew, in 2006, the Ministry of Natural Resources and Tourism (through the Antiquities Division) designated 110 buildings in Dar es Salaam as historical buildings. However, due to conflicting legislation and interests, the GN of 2006 was repealed. Consequently, the 19^{th} century historical buildings in Dar es Salaam central area continue to be abandoned, deteriorated and demolished. Today, it can openly be observed that in Dar es Salaam central area, most modern constructions

of high-rise buildings are done on the same 19th century building locations and within the designated conserved area.

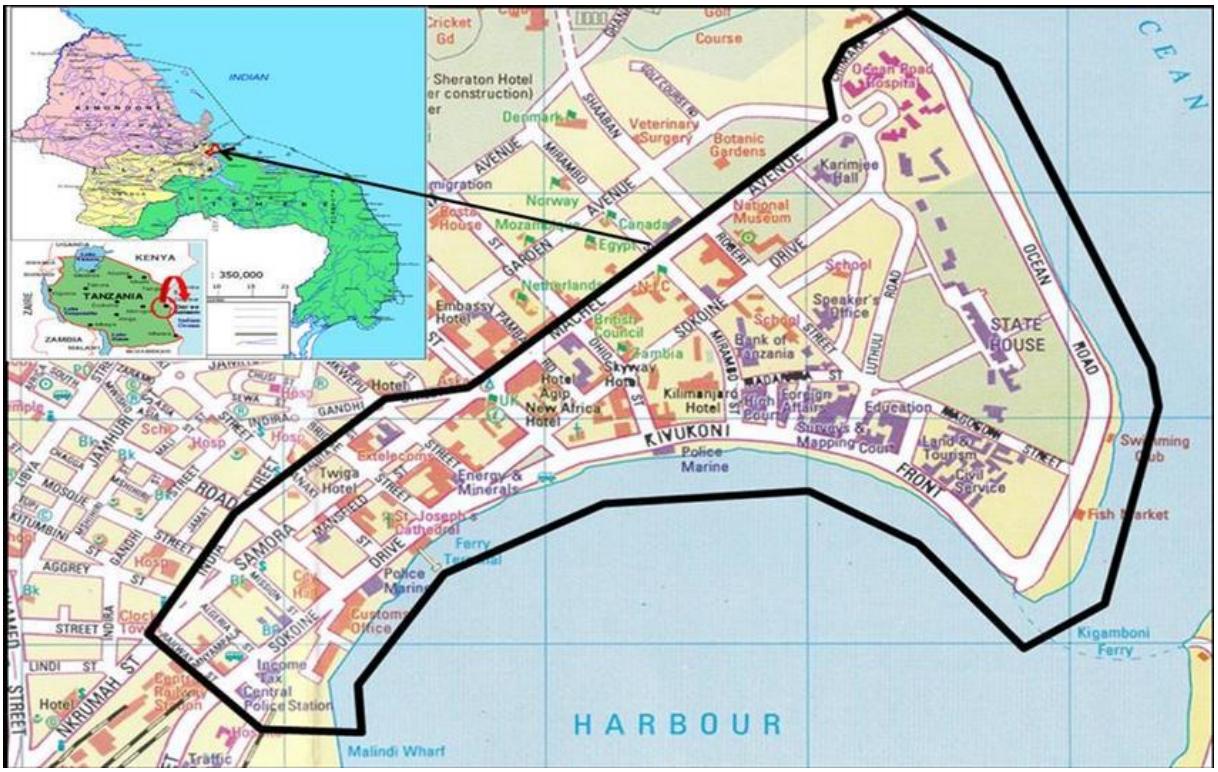

Figure 1: Map of Dar es Salaam Region showing the study area (Adopted from Lwoga, 2013)

2.1 Summary of the Current Inventory System of in Dar es Salaam Historical Building

With regard to the prevailing philosophy of cultural heritage management in Tanzania, legislative and institutional frameworks are aimed at preserving cultural heritage assets, including the 19th century historical towns. This attention to 19th century historical towns led to the designation of a conserved area within Dar es Salaam central area in 1995. It comprises a very small number of historical buildings compared to what Dar es Salaam had by then, the GN was a kick-off point to safeguard the city's built heritage.

The government, through the Ministry responsible for Antiquities, works with village, local government, institutions and individuals to identify, assess, gazette, and promote cultural and natural sites that merit recognition as part of the common national cultural heritage. The government of Tanzania enacted the Antiquities Act No. 10 of 1964 and Amended it by the

Amendment Act No. 22 of 1979 to put in place appropriate methods, procedures, rules and regulations to identify, assess, gazette, transfer, sale, protect develop, manage and promote National Cultural Heritage protects. The Division, at present, has 130 Sites, Monuments and Protected Objects that are listed on the Director's list. And from the list, **table 1** shows only an extract of Dar es Salaam gazette sites.

Table 1: Extracted Director List for Dar es Salaam Heritage Sites

SN	SITE NAME	G.N No.	DESCRIPTION	DATE DECLARED
1	Acacia House	498	19th Century Historic Building built by Arabs	8th September, 1995
2	Arab Mosque	498	19th Century Arab and Indian Mosques	8th September, 1995
3	Jamia Mosque	498	Mosque Religious Building	8th September, 1995
4	Mosque at the Corner of Zanaki and Market Street	498	Mosque Religious Building	8th September, 1995
5	Askari Monument	498	Monument symbolizing the Culture of Peace	8th September, 1995
6	Bandarini Mosque	5	Mosque of 18th - 19th Century	8th September, 1995
7	Botanical Garden	498	Recreational Gardens	8th September, 1995
8	Designated Conservation Area	498	Urban Historic Area	8th September, 1995
9	British Council Library	498	Historic Building built in 1930	8th September, 1995
10	Building Housing Tanganyika Meat	498	Historic Building	8th September, 1995
11	Building Opposite Y.M.C.A. Hostel	498	Historic Building built in 1929	8th September, 1995
12	Buldings on both sides of Central Bus station	498	19th Century - Bus Stand	8th September, 1995
13	Central Statistics Headquarters	498	Historic Building	8th September, 1995
14	City Hall	498	19th Century Historic Building	8th September, 1995
15	Cosy Café	498	19th Century - Historic Building	8th September, 1995
16	Dege Mosque	5	14th Century - Mosques Ruins	8th September, 1995
17	Resident Magistrate's Court	498	Historic Building	8th September, 1995
18	Development House	498	Historic Building	8th September, 1995
19	Forodhani Hotel	498	Historic Building Built in 19th Century	8th September, 1995

SN	SITE NAME	G.N No.	DESCRIPTION	DATE DECLARED
20	Foundation of TANU Building	100	Commemoration of the Birth of TANU	19th February,1965
21	Hindu Temples next to Kisutu Secondary School & Opposite each other	498	19th Century Monument	8th September, 1995
22	Internal Revenue Office building	498	Historic Building Built in 19th Century.	8th September, 1995
23	International Motor Mart	498	Historic Building	8th September, 1995
24	Karimjee Hall	498	Historic Building built by Indians and later used as the First House of Tanzania Parliament	8th September, 1995
25	Kimbiji Mosque	5	Ruins of 18th - 19th Century	6th January, 1961
26	Kunduchi Ruins	411	16th Mosque and 18th - 19th Century Tombs	15th November, 1968
27	Lutheran Church	498	Religious Building	8th September, 1995
28	Magomeni Mwalimu Nyerere Memorial Museum		Memorial Museum	11th December, 1965
29	Mbuamaji Mosque and Graves	5	18th - 19th century Ruins of Mosque and Graves	27th December, 1960
30	Mbweni Mosque and Graves	5	14th - 18th Century Mosque and Tombs	27th December, 1960
31	Mnarani Mosque and Graves	5	Ruins of 19th century Mosque and Tombs	27th December, 1960
32	Mnazi Mmoja Grounds	498	Recreational Gardens	8th September, 1995
33	Msasani Ruins	27	18th - 19th Century Tombs, Ruins and Graves of Shirazi people	16th February, 1951
34	Mtibwani Wall	5	19th Century - Defensive Wall	6th January,1961
35	National Stadium	498	Memorial Independence Stadium	8th September, 1995
36	Ocean Road Hospital	498	Historic Building	8th September, 1995
37	Old Boma	498	2nd Boma after Bagamoyo Old Boma by German	8th September, 1995
38	Old Hall, D.A. Primary school	498	20th Century Monument	8th September , 1995
39	Ras Makabe	241	13th -14th Remains of Tombs and Graves	22nd June, 1962
40	St. Alban's Church and Rectory	498	Religious Church	8th September, 1995
41	St. Joseph's Cathedral Church	498	Religions Church Building by German in Dar	8th September, 1995

SN	SITE NAME	G.N No.	DESCRIPTION	DATE DECLARED
42	State House	498	1st State House in Tanzania	8th September, 1995
43	Town Jamat Khan Mosque	498	19th Century Mosque	30th June, 1995
44	Ukutani Mosque and Graves	5	Grave and Mosque of 18th - Century	6th January, 1961
45	War Memorial Gardens	498	Memorial Gardern	30th June, 1995
46	White Father's Building	498	19th Century Historic Buildings	8th September,1995
47	Old Boma	498	Historic Building	8th September,1995
48	Nkrumah Hall	183	Historic Building	8th May, 2015

3. Value of Historical Buildings

Value of historical buildings, the reviews underlines the difference between intrinsic value of heritage and its instrumental/influential value. Instrumental value includes the importance of heritage for the **social - economic** development. The intrinsic/ essential values show the collective memory of the society. In the recent years, the instrumental value of heritage, as manifested in its social and economic implications, has been claimed by various advocates of heritage and recognised by many policy-makers.

3.1 Measuring the economic value of the historical building

Measuring the economic value of the historical building assist in the decision making (decision to restore/renovate/repair) regarding the conservation of historical buildings in urban areas. Most studies have shown a positive correlation between property value increases and historic preservation. How much value generated by historical building depends on the condition of building as a reference scenario used. The reference scenario can be a building before it renovation and after renovation, example shown in figure 2.

Since the economics encourages the best allocation of the resources to meet a wide range of needs, the economic value may not be restricted to financial value. In ters of architectural heritage, the economic value may be understood as a value generated by the heritage resource, or conservation action. Economic values have four potential sources of revenue: tourism, commerce, use, and amenities. The mismanagement of any of these sources could lead to the

undesirable development or even the destruction of the heritage resources; this is often the case when the profit value is erroneously measured, instead of using a more appropriate **collective cost–benefit approach.**

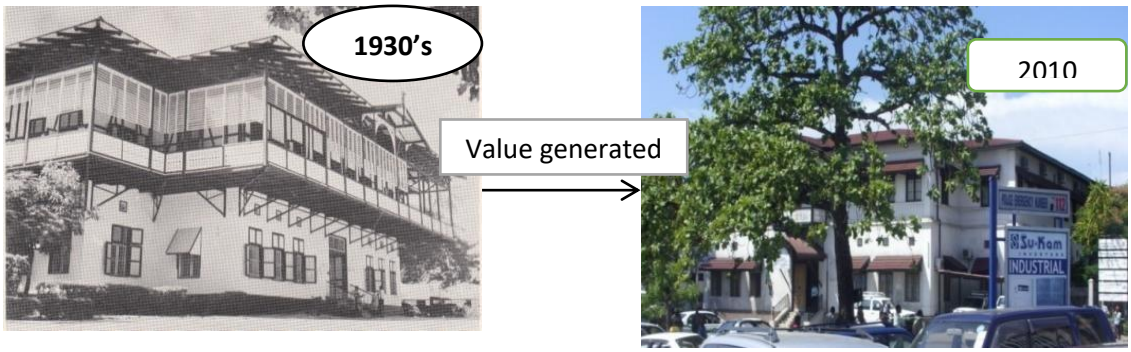

Figure 2: An example of reference scenario of secretariat building in Dar es Salaam

However, in the context of the analysis of the value of historical buildings, it's important to analyse the social and economic implications of such buildings. The values may be grouped into direct and indirect. Figure 3 shows the direct values.

a) Direct Values

Figure 3: Value for historical buildings

b) Indirect Value

The direct value often rubs off to other areas. This can be because an area's built heritage attracts tourism, which, in turn, generates greater revenues for local businesses who are the beneficiaries. In this situation, there is a direct value for tourists, while there is an induced value for local businesses in the form of greater revenues.

3.3 An Outline of Social implication of conservation of historical buildings

Social benefits as the results of conservation of historical building generally;

a) Historical buildings imbue localities with embedded memories. This is important for promoting civil pride.
b) Historical record and legacy for the future. Historical buildings reveal to us how previous societies built their spaces, constructed their buildings. Selected their designs and decoration and understand what they were attempting to achieve with their buildings.
c) Job creation in the developing world where more than half of the population already lives in urban areas.
d) Appropriate treatment of public goods – by nature, listed heritage buildings and conservation areas are public goods even though others are privately owned.
e) Sense of place. Historical buildings have a contributory impact on local areas by inspiring a sense of place insofar as communities, owners, visitors and users of such places. By retaining the buildings within the precincts so designated, we not only preserve the places for ourselves but for future generations.
f) Provides interest to communities and tourists. Traditionally the identification and preservation of historical buildings has been driven by community aspirations about preserving connections with history and the national identity

4 Beneficiaries of Historical Building

Conservation of historical building should have an impact to beneficiaries. Beneficiaries include:

a) Residents
b) Tourists
c) Businesses
d) Government

5 The social – economic challenges of conservation of Historical Buildings in urban areas.

According to Lwoga and Mwitondi, 2018 challenges that lead to poor state of conservation includes;

a) Limited economic benefits and scarcity of resources
b) Weak enforcement of antiquities legislation
c) Limited awareness of conservation issues and responsibilities
d) Limited sense of heritage ownership
e) Skills on installation and pricing of alternative materials
f) Lack of interest and motivation to conserve, neglect by owners and occupants and
g) Lack of trust in the conservation authorities

6 Strategies for conservation of historical buildings in urban areas

a) Assessment of cost of conservation of the historical building.

Although a considerable progress has been made in measuring the economic value of heritage in quantitative terms, both on **macro- and micro-levels,** there is still a long way to go. Many observations have purely qualitative nature and are not supported by **reliable figures** (cost estimates). Therefore the methodology of measuring the economic impact (cost benefit analysis) of historical building is required in heritage planning. The assessment of cost incurred on conservation of the historical can be through;

b) Identify the alternative material and expert needed.

The buildings were constructed in simple classical style of German tradition with little influence from Swahili architectural tradition. Most of the buildings started to be constructed in 1891 and were completed by 1893 (Gillman: 1945 and Sutton: 1970). Materials included coral (coralline limestone) for the masonry which was obtained from the reef and islands outside the harbour (Sutton: 1970) along the present Kivukoni Front. The lime mortar and white plaster was derived from burnt coral which was mixed in proper proportions with sand and other materials. The tasks and achievements of the past periods by locals are rarely practiced today and which are clearly manifested by these buildings (Lwoga 2013).

In this aspect the inadequate availability of traditional materials, there is a need to have alternative materials for the restoration purpose with its associated cost of use of modern technology and expert to preserve the historical buildings. The identified alternative materials should not change the historical building fabric. That is

c) Creating a restoration Plan

The battle to save the Old Boma building from demolition in 1979 was important in bringing public attention to the values of historic buildings in the urban areas. On this occasion, the Division 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. The study by Lucian, 2010 on conservation and maintenance of Old Boma heritage building elaborated on the appropriate restoration plan for the building and to which it's important for the heritage sites in Dar es Salaam to have the restoration plan for its development.

d) Linkage of Institutional framework

Division of Antiquities has to harmonize contradictory laws falling under the jurisdiction of various government agencies. For example, Section 5(1a) of the Antiquities Act prohibits any person without the permission of the Director of Antiquities to destroy, injure, deface, make any alteration, addition or repair; Local Government (Urban Authority) Act of 1983 (2002 Revisions) and Local Government (District Authority) Act of 1984 (2002 Revisions) give mandates to local authorities to make by-laws, and perform functions related to heritage management (access, repair, fence, demolish, etc.).

According to (Schmidt and Ichumbaki, 2020), the local authority powers may be implemented without consulting the Division of Antiquities. It is through such Acts that contradict the principal Antiquities Act (1964) and its amended Act (1979) under which important historical buildings in Dar es Salaam and other regions in Tanzania continue to be demolished. Thus, new construction of high-rises continues in urban authorities and at the expense of historic buildings.

7 Pilot study

Clearly, Dar es Salaam historic buildings have considerable architectural merit that warrants their maintenance. The process of 'listing' is one of the most widely adopted measures for providing protection to buildings or sites of special interest, and is well established in practice and legislation.

Currently, author is conducting a pilot study on the identified sites (28 historical buildings in Dar es Salaam) to determine the social-economic value by assessing the;

1. Historical significance

   Check if the building associated with any significant national historical event/period?

2. Age and condition of the building, extent of dilapidation, potential methodology required for optimum restoration, conservation restoration plan that will be within the current conservation regulatory framework by looking on the **cost benefit analysis**, material compatibility, expert needed and local content including tools or equipment required.

3. Architectural merit with its associated cost of restoration by considering the building style and unique architectural elements like the balcony, pediments, and openings / arches etc.

References

Kigadye F. S., 2014: Architectural Conservation in Rapidly Urbanising Cities: The Case of Dar es Salaam, Tanzania.

Lwoga, N. B and Mwitondi M.S., 2018 Challenges Facing the Conservation of Historic Buildings Through Local Eyes: The Swahili Town of Kilwa Kivinje, Tanzania, Heritage & Society, 11:3, 249-275, DOI: 10.1080/2159032X.2019.1703094

Lwoga, N. B., 2013. Institutional and Legislative Conflicts in the Management of Built Heritage Assets in Neo-Liberal Cities: A Case of Dar es Salaam. Studies in the African Past.

Lwoga, N. B. and Mabulla, A. Z., 2013. Institutional and Legislative Conflicts in the Management of Built Heritage Assets in Neo-Liberal Cities: A Case of Dar es Salaam. Studies in the African Past 11:89-108.

Lwoga, N. B., & Kessy, E. T. (2010). Development of cultural heritage tourism in Dar es Salaam City centre: Demand and perspective.

Lucian C, 2010 Conservation and Maintainance of Historical Building, Conservation and International Training programme – *Conservation and Maintenance of the Old Boma Building in Bag*amoyo (Tanzania)

National Cultural Heritage Register Antiquities Division Ministry of Natural Resources and Tourism Director of Antiquities 2018

Rahel Lucas Kisusi & Juma James Masele (2018). Efficacy of public awareness strategies for promoting existing cultural heritage tourism assets in Dar es Salaam, Journal of Heritage Tourism, DOI: 10.1080/1743873X.2018.1491980

Schmidt, P.R., Ichumbaki, E.B., 2020. Is there Hope for Heritage in Former British Colonies in Eastern Africa? A View from Tanzania. Journal of African Cultural Heritage Studies, Vol 3, No 1. pp.26-51. http://doi.org/10.22599/jachs.29

Shipley, R., 2000. Heritage designation and property values: is there an effect? International Journal of Heritage Studies, 6 (1), 83–100

URT. 1964. Antiquity Act No. 10 of 1964, 'An Act to Provide for the Preservation and Protection of Sites and Articles of Palaeontological, Archaeological, Historical or Natural Interest and for matters connected therewith and Incidental thereto'. Dar es Salaam: Government Printer

URT. 1979. Antiquities Amendment Act No. 22 of 1979. Dar es Salaam: Government Printer

The Current State and Opportunities for Improvingthe Preservation of Cultural Heritage Sites in Tanzania: Perspective of External Auditors

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ABSTRACT

Africa is both fortunate and unfortunate as far as cultural heritage resources are concerned. The continent is fortunate for being home to a variety of heritage assets informative of the origin and development of our humanity. In the meantime, it is unfortunate that Africa does not take care of such vast cultural treasures. Preservation and conservation of cultural heritage sites such as historical buildings, graves, bridges etc. is very crucial for enhancing the sustainability of our culture.

The Audit on the Management of Museum and Cultural heritage sites focused on the efforts undertaken by the government to ensure that Museums and Heritage Sites are adequately managed with a view to guaranteeing the prolonged survival of collections of cultural and natural remains relating to Tanzania's heritage for the coming generations and tourism purposes. This included an assessment of the mechanism for the identification, acquisition, preservation and conservation of museums' collections and Heritage Sites.

The Audit noted that there was inadequate conservation of all 131 Gazetted Cultural Heritage Properties in Cultural Heritage Sites in the country.

The Audit noted that the Village Museum used only 41% of the available land intended for showcasing the material culture of different ethnic groups found in Tanzania. This includes the underutilization of spaces available for the construction of traditional houses of different ethnic groups in the country. For instance, the Village Museum had only 32 such houses. Of these, 6 had collapsed and had not been renovated. Another 13 houses were not in use for public access since they needed renovations. As such, only 13 houses were in good condition for public access.

The unavailability of Human Personnel needed to Preserve and Conserve Cultural Heritage Sites was noted. These include a shortage of needed skills in Architects, Civil Engineering and Quantity Surveying in the country. Moreover, there is no academic institution in the country that offers professional training in the conservation of Heritage Properties such as buildings and graves, and this has led to a shortage of conservators nationally. As a result, the conservation of monuments is done by technicians who do not have sufficient skills, under the guidance of the Head of Monuments and Sites.

Lastly, it was concluded that there was inadequate execution of conservations and preservation plans of Cultural Heritage Sites characterized by: (a) a slow pace ofgazetting Cultural Heritage Sites; (b) the presence of unclear demarcation of Cultural Heritage Sites that attract encroachment to the Sites; and (c) 60% attainment of construction or rehabilitation of Cultural Heritage Sites in the country caused by inadequate management of the Sites.

This paper, therefore, provides an overview of the Current State and Opportunities for improvements in the Preservation of Cultural Heritage Sites in Tanzania. The intention is to address the existing gaps by discussing possible measures for improving the preservation and conservation of Museums and Cultural Heritage Sites in the country.

Keywords: *Cultural Heritage sites, Preservation, Conservation, Rehabilitation, Museum, Audit*

1.0 INTRODUCTION

A museum is an institution that cares for (conserves) a movable collection of artifacts and objects of artistic, cultural, historical, or scientific importance. Tanzania has seven[1] national museums that make the collection of artifacts, cultural, historical and relic objects available for public viewing through exhibits that may be permanent or temporary. Museums have varying aims, ranging from serving researchers and specialists to serving the general public. A museum is a cultural property that often provides primary evidence in a number of subject disciplines, such as archaeology and the natural sciences, and therefore represents an important contribution to knowledge.

The Cultural Heritage Policy of 2008 defines cultural heritage sites as places where cultural heritage resources are found. The register of national cultural heritage issued by the Department of Antiquities in 2018 revealed that Tanzania has a total of 131 gazetted cultural heritage properties (sites, monuments and objects). Out of 131 cultural heritage properties that were gazetted in Tanzania, only four[2] were listed in the world heritage sites. Cultural heritage provides insights into the past and helps people to learn about human history. Heritage sites present a clear picture of our ancient lifestyles and cultures such as working tools used by our ancestors (like stone tools) as well as our ancestors' artwork[3], creativity and other behavioural capabilities.

2.0 SYSTEM FOR MANAGING MUSEUMS AND CULTURAL HERITAGE SITESIMPORTANCE

2.1Policies, Strategies, Governing Laws and Regulations

There are policies, laws, regulations and guidelines which govern the management of Museums and Cultural Heritage Sites in the country as explained below:

2.1.1 Policies

There are two main policies governing the management of Museums and Cultural Heritage Sites in the country. These policies are described below;

(a) The Cultural Heritage Policy of 2008

The Cultural Heritage Policy of 2008 provides that the role of the sector of cultural heritage is to conserve and develop the National Cultural Heritage resources. The policy provides for the intention to ensure that Historical Monuments, cultural areas and sites are protected, preserved and developed. The policy states the functions of the Department of Antiquities within the Ministry of Natural Resources and Tourism that includes collecting, documenting, conserving

[1]Natural History Museums, Village Museum, National Museum and House of Cultural, Arusha Declaration Museum, MwalimuNyerere Museum, The MajiMaji Museum and Rashid MfaumeKawawa Museum.

[2]Ngorongoro Conservation Area, Ruins of KilwaKisiwani and Ruins of SongoMnara, Zanzibar Stone Town and Kondoa Rock-Art Sites.

[3]https://www.tanzaniatourism.go.tz/en/things-to-do/category/historical_sites

and developing Tanzania's architecture and cultural heritage resources including traditional architectural heritage.This is a big and important role which requires clear guiding principles to show where we came from, the present and future developments of our heritage. Despite the availability of other Policies that govern the sector, Cultural Heritage Policy identify and gives directives on key issues concerning the management of cultural heritage resources in the country.

(b) The Cultural Policy of 1997

The Cultural Policy of 1997 provides for the protection and promotion of cultural heritage as a civic responsibility and supervised by the Government. Cultural heritage sites are identified, delineated and developed including the establishment of site museums.

Also, it requires the Government to ensure that private and public offices recognize the value of records and archival material in their possession and preserve them for the nation's history and cultural bearers. All man-made objects become national monuments upon attaining the age of one hundred years.

2.1.2 Governing Laws and Regulations

(a) The Antiquities Act, Cap 333 (R.E 2002)

The Antiquities Act Cap 333 (R.E 2002) provides for the preservation and protection of sites and article of archaeological, historical or natural interest and related matters. Furthermore, it provides for the management of Antiquities through the following;

(i) Allows the Government to:
- enter and inspect any monument;
- fence, repair and otherwise protect or preserve any monument; and
- search and excavate for relics in any monument and remove any relics hitherto undiscovered.

(ii) Allows the Government to:
- excavate, dig or probe for monuments or relics;
- remove or collect any relic or any object he supposes to be a relic from the site of its discovery; and
- search for or collect any ethnographical object.

(iii) Restrict exportation from Tanzania of:
- relic discovered in Tanzania
- monument or part thereof; or
- protected object

(iv) Declaration of any place or structure of historical interest to be a monument.

(v) Sell or exchange of relic discovered in Tanzania, or any protected object can only be done with a license issued by the MNRT

(b) The National Museum of Tanzania Act, 1980

Sections 3(1) and 4(1) of the National Museum Act, 1980 provide for the establishment of the National Museum of Tanzania as well as the Board of the National Museum of Tanzania, respectively. To execute its functions, the National Museum of Tanzania is capable of holding, purchasing and otherwise acquiring in any other way, any movable or immovable or of disposing of any of its property. The Board of National Museum of Tanzania's functions shall be to control, manage and develop the National Museum of Tanzania.

2.2Key Players and their Roles

2.2.1 The Ministry of Natural Resources and Tourism in the management of heritage sites

The Ministry of Natural Resources and Tourism is responsible for the management of natural and cultural heritage resources which are used as tourism products. Specifically, MNRT is responsible for the research and conservation of cultural heritage, developing heritage sites, monitoring, evaluation and reviewing of heritage policies, laws, guidelines and strategies on cultural heritage conservation, and promotion of cultural and natural tourism resources. The management of Cultural Heritage Sites in the country at the Ministerial level is implemented by the Antiquities Department[4].

Roles and Responsibilities of the Antiquities Department

The Department of Antiquities is responsible for the conservation, preservation, protection and management of cultural heritage resources and it has the following specific roles(MNRT, Strategic Plan 2016/17-2020/21):-

(a) Protecting, preserving and developing the country's cultural heritage Sites, approving of matters related to restoration, rehabilitation, documentation and revitalisation of historical monuments, cultural areas and sites;
(b) Collecting, documenting, conserving and developing Tanzania's architectural and cultural heritage resources, including traditional architectural heritage; and
(c) Co-ordination and undertaking of archaeological research and related activities, issuing permits (licenses) to local and foreign researchers for excavation, collection and export of collections.

Institutions under the Ministry of Natural Resources and Tourism

To discharge its mandate of managing museums and Cultural Heritage Sites, the Ministry has one main institution which is the National Museum of Tanzania which is responsible for the National Museums. Also, the Department of Antiquities is responsible for the Heritage Sites. The National Museum of Tanzania has a Board.

[4]MNRT, Strategic Plan 2016/17-2020/21

(a) The Board of the National Museum of Tanzania

Section 4(1) of the National Museum of Tanzania Act of 1980 states that there shall be established the Board of the National Museum of Tanzania. Functions of the Board shall be to control, manage and develop the National Museum of Tanzania and for the purposes of carrying out those functions the Board may:

- exchange, sell or otherwise dispose of any duplicate objects belonging to National Museum that the Board considers unfit to be preserved or not required for the purposes of the National Museum;
- lend any objects belonging to 'the Board to any gallery, museum, exhibition or, educational institution whether within or outside Tanzania;
- advise the Minister on all matters connected with the development of museums in the country.

(b) The National Museums of Tanzania

The National Museum of Tanzania (NMT) is a corporate body established by the National Museum of Tanzania Act No.7 of 1980. It is a scientific and cultural institution charged with the duties of collecting, conserving, displaying and researching on all materials relating to Tanzania's culture and natural heritage.

The major roles and functions of the MNT are to;-

- Conduct research and collection expeditions in the fields of movable cultural and natural heritage and publish and disseminate information;
- Preserve, protect and curate the movable cultural and natural heritage for use by present communities and future generations;
- Educate and sensitize the public as to the value of cultural and natural heritage through exhibitions, publications, cultural festivals and other media in order to promote national unity; and
- Set criteria and promote the establishment of Museums in Tanzania at different levels i.e. regional, district and divisional levels.

2.2.2 Other Key Stakeholders

(a) Honorary Antiquities Warden

Antiquities Act (Principal Legislation) Cap 333 (R.E 2002) allows the Director of Antiquities to appoint fit and proper persons to be honorary Antiquities Warden for the purpose of assisting in the carrying out management of Antiquities in the country. During the year 2019/20, 109 cultural heritage sites were awarded to 5 'competent authorities' namely Ngorongoro Conservation Area Authority (NCAA), Tanzania Forest Services Agency (TFS), Tanzania Wildlife Authority (TAWA), Tanzania National Parks (TANAPA) and the National Museum of Tanzania (NMT).

Honorary Antiquities Wardensare responsible for Human resource management, Revenue Collection Management and general operation of gazetting sites. The Ministry is responsible for the policy formulation and overseeing its implementation regarding the management of Cultural Heritage Sites in the country.

(b) Researchers and Academicians/Scientists

Researchers and Academicians with a background in Museums and Cultural Heritage Sites are consulted to provide inputs for better operations of Museums and cultural heritage Sites. Researchers and Academicians are used to providing research consultancy, outreach programs, projects, lectures, seminars and workshops. They are also responsible to ensure museological expertise and share of findings to NMT on the research conducted. Also, collections generated from research in the country are required to be kept at the National Museum after the completion of research work, hence the additional source of museum collections[5].

(c) Citizens

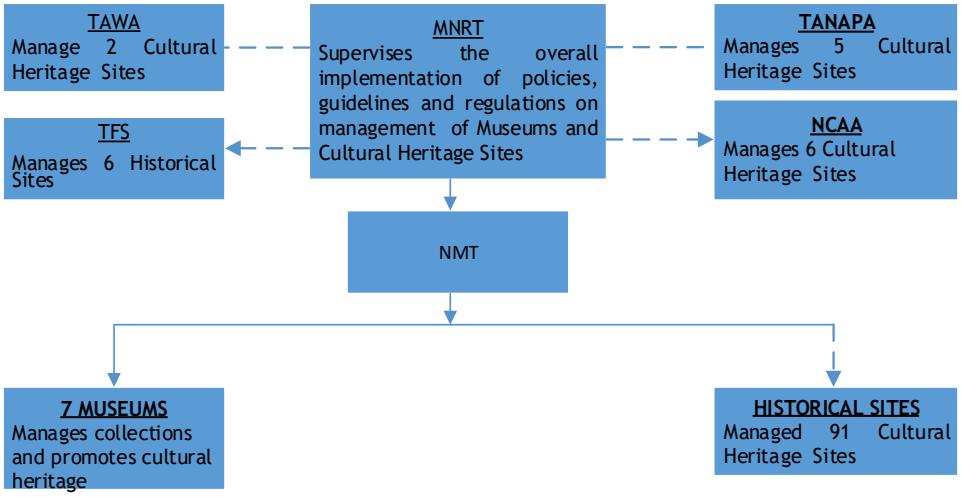
Citizens are involved during knowledge sensitization on value of cultural and natural heritage. NMT and other actors that manage nature and culture provide knowledge to citizens through Exhibitions, publications, cultural festivals and other media in order to promote identity and sense of unity in the country. Also, in order to attain the target of the Ministry of Natural Resources and Tourism efforts were in place to increase revenue collection in the tourism sector. It was expected that number of citizens that visit tourist attractions to increase so as to attain the targeted revenue of TZS 180 billion by June 2021[6].

2.2.3 Relationship among Stakeholders in the Management of Museums and Cultural Heritage Sites

Museums and Cultural Heritage Sites fall under the Ministry of Natural Resources and Tourism. Whereas museums are managed by National Museum of Tanzania, cultural heritage sites were managed by the Directorate of Antiquities before 2017, but by the power vested to the Minister of Natural Resources and Tourism he appointed the institutions under his Ministry to oversee the Cultural Heritage Sites because they were underperforming.

If adequate investments that do not jeopardize conservation ethics is done these heritage sites will be able to generate reasonable income; however, income generation has never been a driving force for heritage conservation globally. **Figure 2.1** sows the link between the entities under the Ministry of Natural Resources and Tourism managing Museums and Cultural Heritage Sites.

[5]Analysis of the NMT Strategic Plan, and Functions of NMT
[6]Medium-Term Strategic Plan for the 2016/17 - 2020/21



Source:*Analysis of Roles and Responsibilities of various Institutions within MNRT in the Management of Museums* and *cultural heritage Cultural Heritage Site from Legislation*

Figure 2. 1: Relationship among Institutions Managing Museums and Cultural Heritage Sites

2.3 Museums and Cultural Heritage Sites

2.3.1 Museums

According to the National Museum Act of 1980, a Museum is defined as an educational and cultural institution for the collection, preservation and research of scientific and cultural objects. In Tanzania museums are classified according to ownership, hence Public Museums and Private Museums. Public museums are those owned by the government while private museums are those owned by non-government institutions.Tanzania has a total of 42 museums whereas 23 are under the government ownership and 19 are under non-governmental institutions(Museum Sector Survey in Tanzania by NMT, 2021)as detailed in **Table 2.1**.

Table 2.1: Category of Museums in the Country

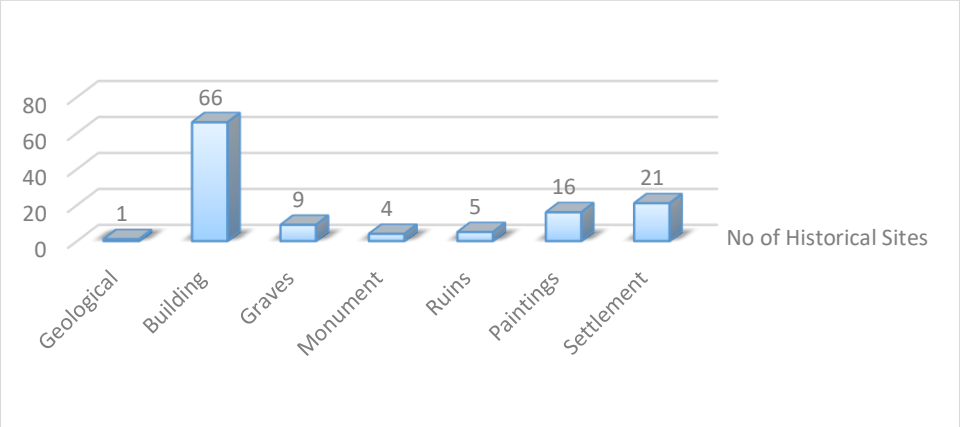
Museum Category	**Owner**		**Number**
Government	Ministry of Natural Resources and Tourism	National Museums of Tanzania	7
		Other Institutions	10
	Institutions under other Ministries		3
	Local Government(City, Councils and District)		3
Sub-Total			23
Non-Government	NGO		4
	Religious Institutions		6
	Private Individual /Group Entreprise		8
	Community based		1
Sub-Total			19
Total			**42**

Source*:* Museum Sector Survey in Tanzania by NMT, 2021

From **Table 2.1** under the Government, the Ministry of Natural Resources and Tourism has 17 Museums whereby 7 are owned by the National Museum of Tanzania and are considered as National Museums. The remaining 10 museums are owned by TANAPA, NCAA, TAWA and TFS.

2.3.2 Cultural Heritage Sites

Cultural Heritage Sites are the official locations where pieces of cultural or social history are found and preserved due to their cultural heritage value. They are protected by Antiquities Act, CAP 333 (R.E 2002). Heritage sites are categorized based on their nature. For instance, Cultural Heritage Sites are categorized into Geological; Buildings that include Structures, Defensive Walls, Religious or Historic buildings; Memorial Graves; Monuments; Ruins; Paintings and Rock Shelters; and Historic Settlements or Recreations (Cultural Heritage Register of 2018) as shown in **Figure 2.2** below



Source: Analysis from Cultural Heritage Register of 2018

Figure 2.2: Number of Heritage Sites Based on their Nature

In Tanzania there are a total of 131 Cultural Heritage Sites that were managed by the Directorate of Antiquities but due to underperformance and inadequate funding the Directorate of Antiquities had to transfer them to other institutions that are under the Ministry of Natural Resources and Tourism.

By virtue of the power conferred upon the Minister these other institutions were appointed as Honorary Antiquities Wardens. These institutions are Ngorongoro Conservation Area Authority that were given 5 sites, Tanzania Forestry Services Agency were given 6 sites, Tanzania National Parks were given 5 sites and Tanzania Wildlife Management Authority were given 2 sites. The remaining 91 heritage sites were given to the National Museum of Tanzania. The Directorate of Antiquities will oversee the sites from above.

2.4 Activities Performed in the Management of Museums and Cultural Heritage Sites

There are various activities that are performed by different institutions in the course of managing museums and cultural heritage sites. The following are activities involved;

2.4.1 Research

Researches on cultural heritage sector are conducted by professionals available at NMT and Academic Institutions in the country such as the University of Dar Es Salaam. Additionally, researches are conducted in collaboration with foreign experts. The knowledge obtained from research provides opportunities to reflect in a contemporary context, as well as for the interpretation, representation and presentation of museums' collections. It is only through the knowledge obtained from research that the full potential of museums and Cultural Heritage Sites can be realized and made available for public consumption.

2.4.2 Conservation and Preservation

The preservation of cultural and natural heritage in Museums and heritage Sites comprises of activities such as the acquisition of museum collections, collection management, risk analysis, security of collections, as well as preventive measures against deterioration of the collections. Conservation involves remedial activities for the purpose of ensuring the sustainability and integrity of collections when used and stored(Analysis from ICOM Code of Ethics, 2013). Both Curators and Conservators are responsible for preserving and conserving natural and cultural resources. **Table 2.2** presents activities falling under conservation and preservation.

Table 2. 2: Conservation and Preservation Activities

Activity	Requirements	Responsible Actor
Collections Management	• Collection Policy in place. • To document collections • Competence Museum personnel • Collection Conservation and Restoration	NMT
Security of collections	Insurance of Museum Collections	NMT
Issuance of Permit for Rehabilitation or restoration of Cultural Heritage Site assets	Approving matters related to restoration, rehabilitation, documentation and revitalization of monuments, cultural areas and sites	DoA

Source: Analysis from ICOM Code of Ethics, 2013, and Antiquities Act of 1964/1979

2.4.3 Communication

Interpret and disseminate knowledge on museum collections, monuments and sites within their specific area of expertise and organize exhibitions as appropriate. Also, NMT organizes public events, taking part in relevant cultural activities and other interactions with the public in both physical and digital forms in promoting and protecting national heritage.(Analysis of NMT Annual Reports 2016/17-2019/20)

2.4.4 Education

NMT provides formal and non-formal education and lifelong learning through the development and transmission of knowledge, education and pedagogical programs that help to raise greater awareness of the importance of preserving heritage and fostering creativity. NMT also provide knowledge and experiences that contribute to the understanding of related societal issues.

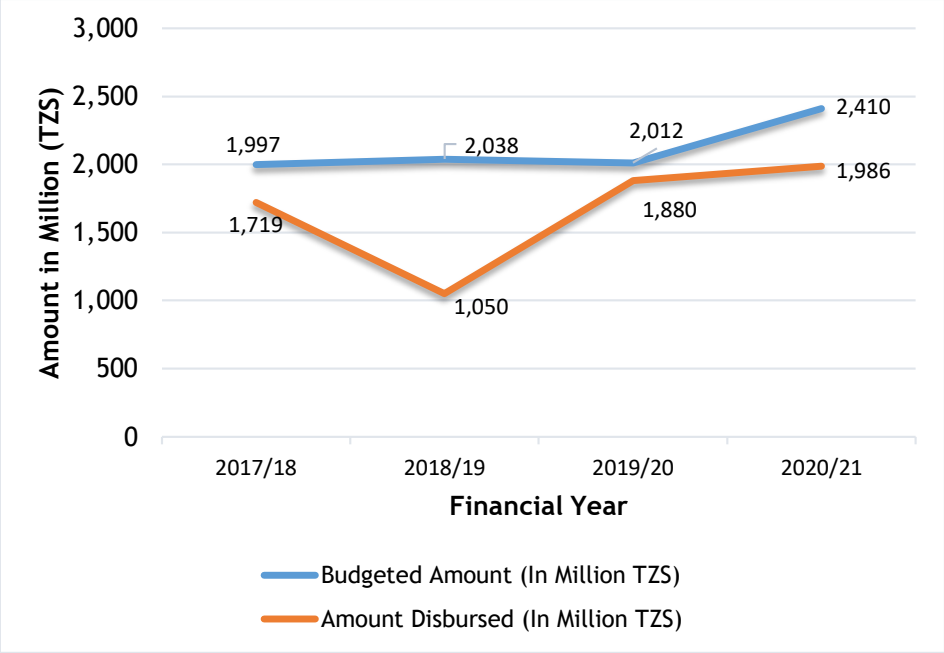
2.5 Resources for the Management of Museums and Cultural Heritage Sites

In order to ensure the implementation of activities regarding the management of Museums and Cultural Heritage Sites both human and financial resources to execute the planned activities are vital.

Financial Resources

The allocated financial resources to cater for planned activities at the Ministry of Natural Resources and Tourism and National Museums of Tanzania are as shown below;

(a) ***Ministry of Natural Resources and Tourism (MNRT)***



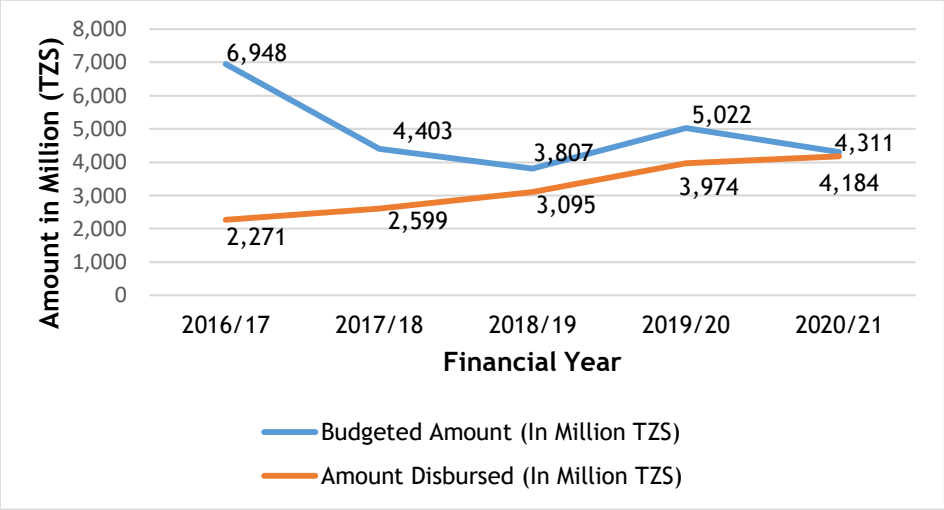
Source:Medium - Term Expenditure Framework for the period between 2017/18 to 2020/21

Figure 2. 3: Budgeted and Disbursement of Fund between 2017/18 to 2020/21 for the Division of Antiquities

From **Figure 2.3** above the Antiquities Division received more than 50% of the budgeted amount for the period 2017/18 to 2020/21. Availability of funds facilitated the execution of the planned activities including preservation, rehabilitation and provision of public awareness and personnel training in the country.

(b) ***National Museum of Tanzania (NMT)***

The National Museum of Tanzania implemented the planned activities through funds disbursed from the government via the responsible Ministry of Natural Resources and Tourism. **Figure 2.4** presents the budgeted and released amounts for the last five financial years.



***Source*:** Medium—Term Expenditure Framework for the period between 2016/17 to 2020/21

Figure 2.4: Budgeted and Disbursement of Fund between 2016/17 to 2020/21 for the National Museum of Tanzania

For the period from 2016/17 to 2020/21, NMT received a total of TZS 16.122.72 million (equivalent to 66%) of the total budgeted amount of TZS 24,492.15 million. During the financial year 2016/17 NMT received 33% of the budgeted amount and for the period from 2017/18 to 2019/20, NMT received more than 50% of the budgeted amount.

3.0 DESIGN OF THE AUDIT

3.1 Audit Objective

The main audit objective was to assess whether the Ministry of Natural Resources and Tourism and the National Museum of Tanzania have adequately managed Museums and Heritage Sites in order to ensure long-term survival and enhance Tanzania's culture and natural heritage.

Specific Objectives were to assess whether there are:

(a) A mechanism in place for the identification, and acquisition of collections relating to Tanzania's culture and natural heritage;

(b) Criteria for the establishment of Museums and declaration of Heritage Sites are in place and adhered to consistently;

(c) Conservation and preservation measures in place to ensure sustainability of Museum Collections and Heritage Sites;

(d) Sufficient resources (skilled personnel, equipment and funds) for the management of Museums and Cultural Heritage Sites in place; and,

(e) Monitoring and evaluation mechanisms on the performance of Museums and Heritage Sites in the country.

3.2 Scope of the Audit

The main audited entities were the Ministry of Natural Resources and Tourism (MNRT) and the National Museums of Tanzania (NMT). This was because this Ministry is responsible for managing and overseeing all Museums and Heritage Sites in the country. NMT is responsible for day to day management and supervision of museums and a caretaker of 91 gazetted heritage sites in the country.

The focus of the audit was on the efforts undertaken by the government to ensure that Museums and Heritage Sites are adequately managed with a view to guarantee the long-term survival of collections of cultural and natural remains relating to Tanzania's heritage for the coming generations and tourism purposes. This included an assessment of the mechanism for identification, acquisition, preservation and conservation of museums' collections and Heritage Sites. The audit also assessed the level of resources (skilled personnel and funds) used for the management of museums and Heritage Sites and the adequacy of mechanisms for monitoring and following up on their performances.

With regard to the mechanism of identification and acquisition of collections of natural and cultural heritage, the audit assessed the conduct of research based on the issuance of permits, funding, management of movable relics, and presence of inventories of cultural materials, Cultural Heritage Sites and utilization of research results.

On the preservation measures, the audit assessed the availability of defined mechanisms for conservation, preservation and the extent of the Ministry and NMT's involvement. On the conservation measures, the Audit Team also assessed the availability of defined mechanisms for conservation and their implementation by assessing the extent of conservation done by NMT.

On the sufficiency of resources, the Audit Team focused on the availability of skilled personnel and funds for the management of Museums and Heritage Sites in the country.

With regards to monitoring and follow-up on the management of Museums and Heritage Sites, the Audit Team ascertained the presence and operationalization of the monitoring framework and follow up mechanism. It also ascertained the availability and adequacy of Key Performance Indicators in evaluating the performance of Museums and Heritage Sites and the Performance of the National Museum of Tanzania. Furthermore, the Audit Team confirmed on the existence and functionality of follow-up mechanisms in tracking the implementation of recommendations and planned improvements.

The Audit Team also covered both Heritage Sites and Museums where cultural, political and natural museums were considered. In addition, the Cultural Sites managed by the National Museums of Tanzania (NMT) and other entities were also covered.

The audit covered a period of five financial years (i.e. 2016/17 to 2020/21). This period was chosen because it provided performance trend of the Ministry and NMT on the management of Museums and Heritage Sites in the country. Also, this period provided the basis for the assessment of the Cultural Heritage Sites before and after being transferred to other entities.

3.3 Methods Used for Data Collection

The Audit Team used three main methods to collect information from the audited entities and stakeholders. These methods include *interviews, document reviews, and observations* on the management of museums and heritage sites as detailed below:

(a) Documents Review

The Audit Team reviewed documents from MNRT, NMT, 4 selected Museums and 12 selected Heritage Sites so as to get comprehensive, relevant and reliable information about the management of Museums and Heritage Sites in the country.

Reviewed documents from the audited entities were those falling within the period under audit i.e. from July, 2016 to December, 2021. The reviewed documents included: planning documents, performance and progress reports, registers of the museum's collections and visitors, and monitoring and evaluation reports.

(b) Interviews

Interviews were held with Officials from the Ministry of Natural Resources and Tourism, the National Museum of Tanzania, 4 Museums and 12 Heritage Sites in order to gain insights and clarifications on the information regarding practices and mechanisms in place for developing and enhancing the sustainability of Museums and Heritage Sites. Furthermore, interviews were used to validate the information from the reviewed documents.

(c) Observations

Physical observations were made of all Museums and Heritage Sites that were visited by the Audit Team. During the observation, notes were taken on the observed conditions of the Museums and Heritage Sites as well as taking pictures of the observed infrastructure and facilities.

The Audit Team also observed the status of Museum and Heritage Sites in relation to the management, identified the museum collections and Heritage sites, preservation of Museums Collections and Heritage Sites, and mechanisms in place for the conservation of Museums and Heritage Sites.

4.0 AUDIT FINDINGS

4.1 Inadequate Development of Museums and Heritage Sites

For the period between 2016/17 to 2020/21, the audit noted that Museums and Heritage Sites were left undeveloped. Inadequate development of Museums and Heritage Sites was evidenced through the following indicators:

4.1.1 Underperformance of Heritage Sites

The Audit noted MNRT did not ensure adequate preservation of cultural remains in all 131 gazetted Heritage Sites. Out of 131 gazetted Heritage Sites only 18 (equivalent to 14%) were operational in terms of public access and protection mechanisms. MNRT have information regarding the operational status of these heritage sites. However, in the 12 visited heritage sites that were managed under MNRT through DoA, there was an absence of information centres and staff to take care of the sites. Only 4 out of 12 visited heritage sites have information centres to guide the visitors.

The Audit noted that of 131 heritage properties registered to date, 76 (58.8%) were proclaimed and registered during the colonial period by the British colonial government. Since independence, DoA has proclaimed and registered only 55 properties (41.2%) which are located in eight administrative regions and cover only 30.7% of the regions of Tanzania. That reveals that DoA has not been able to conduct a nationwide survey to identify, locate and proclaim cultural heritage properties for protection.

It was observed that only 15 (11%) of Cultural Heritage Sites contributed to revenue for the period from 2016/17 to 2020/21. The Heritage Sites that collected revenue included Kaole Ruins (Coast), Kunduchi Ruins (Dar Es Salaam), Oldupai Gorge (Arusha), Isimila Stone Age Site (Iringa), Bagamoyo Stone Town (Coast), Mkwawa Grave in Kalenga (Iringa), Ruins of KilwaKisiwani and SongoMnara (Lindi), Mbozi Meteorite (Songwe), Amboni Caves and Tongoni Ruins (Tanga), Livingstone Memorial Site Museum (Kigoma), Livingstone's Tembe and Kwihara Reserved Area (Tabora), MungomiwaKolo (Dodoma), Caravan Serai (Pwani), and MwalimuNyerere Memorial House (Dar Es Salaam).

Out of 18 heritage sites that were transferred to the Honorary Antiquities Wardens namely; NCAA, TANAPA, TFS and TAWA, 4 Cultural Heritage Sites (22%) did not generate revenue for the past five years. These Cultural Heritage Sites include Old Afya Building managed by TFS, Engaruka Ruins, Engaresero and Mumba Rock Shelter both managed by NCAA.

The main reason for the above anomalies was due to unapproved investment guidelines that could guide proper decision-making and choice of the investment opportunities available in the respective cultural heritage sites.

The Audit noted that out of 12 visited Heritage Sites, 7 had inadequate details about the Cultural Heritage Sites or content(s) therein. For instance, there was no information such as names, dates

of the objects and details about it; for example, for structures, Cultural Heritage Site graves and walls as evidenced at German Bridge (Dodoma), Fliessbach Grave (Dodoma), Kisikimto Graves and Mosque (Tanga), Chongoleani Wall (Tanga), Chikalikani Walls (Tanga), Kunduchi Ruins (Dar Es Salaam) and Mbuamaji Mosque and Graves (Dar Es Salaam).

- **Underperformance of the Museums**

The Audit found out that Museums Premises did not ensure the well-being and sustainability of Museums' collections. For instance, 3 out of 4 visited museums namely the National Museum and House of Culture, MajiMaji Museum and the Village Museum were found with limited space for storage of museum collections.

The Audit noted that the Village Museum used only 41% of the available land intended for displaying traditional houses of different ethnic groups found in Tanzania. It was noted that 13 out of 32 houses were operational and open for public access; 6 houses had fallen dawn and were never renovated, and 13 other houses were not in use for public visitors since they needed renovation.

On the level of compliance to the requirement for the establishment and management of museums, it was found out that 1 out of 10 parameters was fully complied with, namely Display Exhibition. Six out of 10 parameters were partially complied, namely; Research, conservation and restoration of collections, Documentation of collections, museum premises, the competence of museum practitioners, and income-generating policy. Three out of the 10 parameters were not complied with, namely; disposal of objects, insurance, and collection policy. To a large extent, museums in the country complied with only 1 out of 10 established parameters for the establishment and management of museums.

(a) Museums' Premises did not ensure the Sustainability of Museum Collections

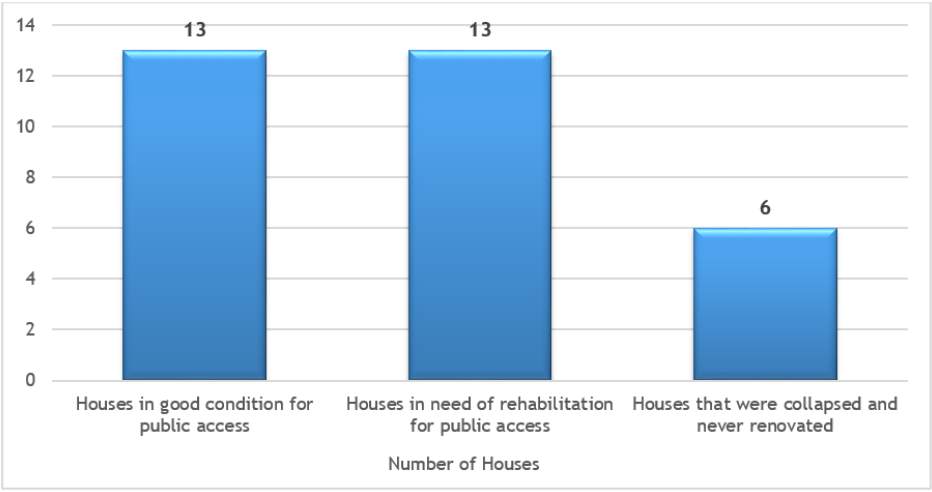
The audit noted that 3 out of 4 visited museums, namely; the National Museum and House of Culture, the Majimaji War Memorial Museum and the Village Museum, had limited space for storage of museums' collections, hence did not ensure the sustainability of the collections.

The audit team visited the National Museum and House of Culture in November 2021 and noted the insufficiency of pertinent storage facilities to accommodate all categories of collections in all six sections, namely; Archaeology, Arts, Biology, Ethnography, History and Palaeontology (see e.g. **Photo 4.1**).

Photo4.1: A sample of museum collections (mammal bones) stored on the floor at the National Museum and House of Culture, Dar Es Salaam
*(**Source**: Auditors' Observation, November 2021)*

During the site visit conducted in November 2021, The Audit noted that the Village Museum used only 41% of the available land intended for showcasing material culture of different ethnic groups found in Tanzania. This includes the underutilization of spaces available for the construction of traditional houses of different ethnic groups in the country.

By the time the Audit team visited the site, the Village Museum had only 32 such houses. Of these, 6 had collapsed and had not been renovated. Another 13 houses were not in use for public access since they needed renovations. As such only 13 houses were in good condition for public access. **Figure 4.1** depicts the status of available houses at the Village Museum at the time of this audit.



***Source*:** Village Museums Implementation Report and Auditors Observation, November 2021

Figure 4.1: The Conservation Status of Traditional Houses at the Village Museum

Review of Village Museum's Plan for improvement of service and sustainable land use revealed that, in 2016 Village Museum developed a land use plan which intended to allocate the

constructed houses based on the structure or map of Tanzania. The plan allowed the village museum to construct houses at the village museum of each ethnic society to represent their respective region. Interviews held with officials from Village Museum revealed that the available plan discouraged the rehabilitation of 6 ethnic houses that were not allocated as per the Tanzania map.

Furthermore, the Audit noted the under collection of targeted revenue by the Museum for the period of 3 years (2016/17 to 2018/19). During the cited years, NMT managed to collect about 70% of the target. For the following years, 2019/20 and 2020/21, NMT managed to collect around 48% and 32%, respectively, of the target set. While the COVID-19 Pandemic is likely to have contributed to this trend, the audit noted the prevalence of under-collection even before the advent of the crisis. Generally, the under collection of internal sources of revenue is largely due to a decrease in the number of visitors as well as the unavailability of tenants in the available rental properties of NMT.

4.1.2 Efforts by MNRT to enhance Development of Museums and Heritage Sites

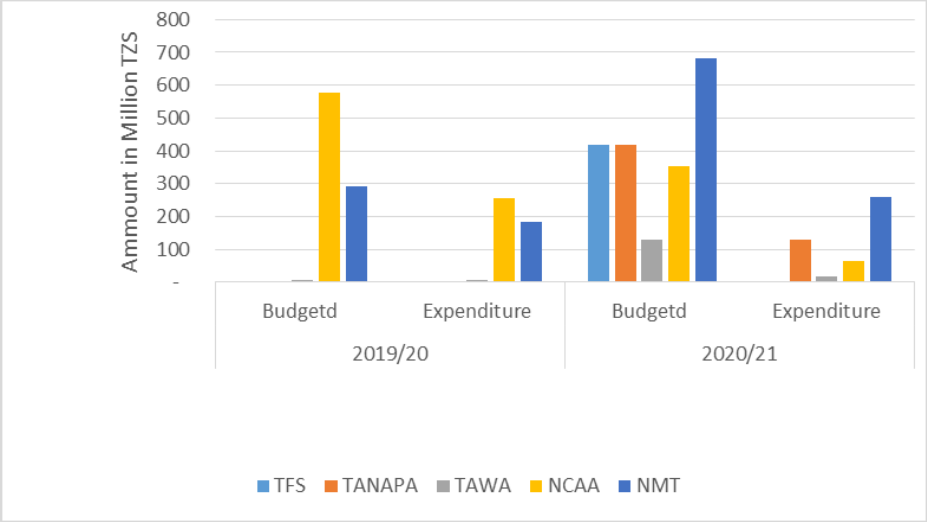
The Audit noted some infrastructural development as among the strategies for enhancing the development of Heritage Sites. That was evidenced through a release of the budgeted fund to cater for rehabilitation, conservation and construction at some Heritage Sites for the year 2017/18 and 2018/19.

However, it was noted that the disbursement of funds was less than the budget for the period from 2017/18 to 2018/19. Out of the cumulative budgeted amount of TZS 1,248,918,192, the released amount was TZS 795,425,494, which is equivalent to 64% consequently, the inadequate release of funds led to non-completion of all planned activities intended for developing Heritage Sites.

Transfer of Heritage Sites to the Honorary Antiquities Wardens

The Audit noted that there were funds allocated by the Honorary Antiquities Warden for improving the Cultural Heritage Sites.

In the year 2019/20, only two institutions (NMT and NCAA) were allocated fund for infrastructural development on the given Heritage Sites. NMT and NCAA spent 63% and 59% of the total fund respectively, in the year 2019/20. While in the year 2020/21, all five institutions allocated budgets for developing Museums and Heritage sites in the country, only NMT, TANAPA, NCAA and TAWA affected their budget; this was by 38%, 31% 19%, and 14% respectively as detailed in the figure below



Sources: *Analysis of information from MTEF and Implementation Reports of TFS, TANAPA, NCAA and NMT*

Figure 4.2: Allocated Fund and Expenditure for the Development of Infrastructures for Museums and Cultural Heritage Sites

Despite the effort of transferring the management of Heritage Sites from DoA to the aforementioned Wardens, the Audit noted some weaknesses as follows:

Out of 109 transferred heritage sites, the audit team managed to obtain only 10 Memorandum of Understandings (equivalent to 9%) that were signed between MNRT and the honorary antiquities warden namely; TANAPA, TAWA, TFS, NCAA and NMT. Also, there was no signed Memorandum of Understanding between MNRT (DoA) and NMT regarding the management of 91 sites that were transferred to NMT.

The absence of situational analysis to evaluate whether or not the transfer would end the problems pertaining to the development of Cultural Heritage Sites.

Absence of a timeline in all the 131 Heritage Sites that were transferred to the Honorary Antiquities Warden had no defined timelines on when the Heritage Sites would be returned to be managed by the responsible entity.

These limits the initiatives of the appointed Honorary Antiquities Wardens towards developing the Heritage Sites. This was attributed to the lack of a proper road map at MNRT towards the restoration and development of the Heritage Sites to ensure the sustainability of cultural heritage resources.

4.2Inadequate Mechanisms in Place for Identification and Acquisition of Museums' Collections and Heritage Sites

The Audit noted that there were inadequate mechanisms in place for the identification and acquisition of Museums' collections and Heritage Sites. This was attributed to insufficient

research that could enable the identification and inform on proper procedures for acquiring museums' collections and heritage sites at MNRT.

The Audit noted insufficient research activities due to inadequate research plans, non-establishment of the Research Council, insufficient monitoring of researches undertaken in the country, and a lesser number of experts in the field of antiquities.

Inadequate budget for research activities

The Audit found out that at NMT despite that they were supposed to conduct 30 researches (at least 2 in each field), there was an inadequate release of the budgeted amount of funds for research activities. Failure to conduct such institutionalized and thematic research has led to a lack of inventory of heritage resources available in the country. In turn, this led to inadequate augmentation of museums' collections, acquisition of new heritage sites for protection, as well as a lack of scientific publications.

Inadequate Mechanisms in place to ensure Inventory of Collections after the Completion of Research

The Audit noted that at the Division of Antiquities there was no any mechanism to ensure the inventory of collections after the completion of research, especially those undertaken by foreigners. Such inventory was also missing for the materials that are being taken to foreign countries for laboratory procedures. This was evidenced by the absence, since 2010, of cultural materials that were supposed to be returned back to Tanzania after pertinent export permits had expired. Inadequate follow-up on the exported research collections caused this.

Inadequate Utilization of Research Findings

The Audit noted inadequate utilization of research findings at NMT and DoA. This is evidenced by the lack of newly-generated museum collections from research activities undertaken in the country, as well as the lack of newly identified and gazetted heritage sites in the country.

This was largely caused by the inadequate submission of scientific research reports due to a lack of close follow-up by DoA. A total of fifty-two (52) research projects were conducted in different Heritage Sites and Museums in the country for (the period of) the past five years from 2016/17 to 2020/21 but, no scientific research reports were availed to the MNRT. The audit noted that inadequate utilization of research findings was caused by an absence of research policy and pertinent guidelines.

4.3 Adherence to Procedures and Processes for the Establishment of Museums and Declaration of Cultural Heritage Sites

For the period from 2016/17 to 2020/21, the audit team selected two recently gazetted cultural heritage sites, namely Nkrumah Hall and the Historic Town of Mikindani, to assess the adherence to the required procedures. The audit team noted that the declaration processes of Nkrumah Hall complied with the established criteria and procedures. However, for Mikindani

Historic Town, the audit team was not availed with the documents informative of the procedures followed. This implied non-compliance to the established criteria stated under Section 3 of the Antiquities Act (Principal Legislation) Chapter 333.

Unavailability of Local Standards and Procedures for the Establishment and Management of Museums in the Country

The Audit team noted the unavailability of local standards to govern the establishment of national museums in the country. For the period from 2016/17 to 2020/21, one national museum was established in Tanzania namely, Rashid MfaumeKawawa Museum. The audit noted the unavailability of documents that could help to assess if the criteria for the establishment of the mentioned museum, which was officially opened on 27th February 2017 were met.

Unavailability of local procedures for the establishment of Museums in the country was due to minimum effort in place to ensure the establishment of local standards and procedures. Consequently, there has been a low pace of establishing and opening new museums in the country (as stipulated in the National Museum Act No. 7, 1980 Cap 281), hence failure of the National Museum to serve the wide community as pledged in Tanzania's Cultural Policy of 1997.

4.4Inadequate Preservation of Cultural Historical Sites and Museum Collection

Despite the presence of sectoral policies (i.e. Cultural Policy of 1997 and the Cultural Heritage Policy of 2008), the audit team noted a lack of specific policies responsible for directing the conservation of heritage sites.

4.4.1Inadequate Plans to ensure Conservation of Cultural Heritage Sites

The audit noted the inadequate implementation of plans for conservation of Cultural Heritage Sites due to the slow pace of gazetting Heritage Sites and the presence of un-demarcated conserved areas. Additionally, there was only 60% attainment of construction or rehabilitation of infrastructures in cultural heritage sites. A Review of the National Cultural Heritage Register as updated in 2018 revealed that for the period from 2016/17 to 2020/21 MNRT managed to gazette Mikindani Historic Town only in 2017, out of targeted 6 cultural heritage sites and 14 historical buildings.

A Review of the implementation of the Strategic Plan revealed that, MNRT managed to demarcate the boundaries of 2 heritage sites namely Kalenga and Livingstone TembeKwihara for the period from 2016/17 to 2020/21.

4.4.2Absence of clear demarcations of Cultural Heritage Sites

The audit noted unavailability of clear demarcation and regular encroachment of the sites. Out of 12 Cultural Heritage Sites visited by the audit team, 3 heritage sites namely; Mbuamaji, Chongoleani Wall and Kichalikani Wall had no clear demarcations. As a result, the surrounding

community allocated to themselves pieces of land around the Cultural Heritage Sites. The lack of clear demarcations of boundaries for some of the cultural heritage sites was due to inadequate efforts of conducting detailed land survey, following up and monitoring by MNRT on the Heritage Sites.

Photo 4.2:Chongoleani Wall found in between community houses. This picture was taken on 19th January 2022

Lack of clear demarcations of boundaries for some of the cultural heritage sites was due to inadequate efforts of conducting detailed land survey, following up and monitoring by MNRT on the Heritage Sites.

- **Regular Encroachment of the Heritage Sites**

The Audit Team noted that in the 5 heritage sites that were encroached 2 had clear demarcations. The two visited sites that had clear demarcations and were still encroached on were Kunduchi Ruins and Amboni Caves. Kunduchi Ruins, had incidences of regular encroachment to the extent that a private school has been built within the area of the sites.

Furthermore, Amboni Caves is surrounded with quarrying mining plots whose owners involve themselves in mining activities which involve dynamite blasting that increases the risk of the collapse of caves due to the massive explosions. The explosions also leave empty pits around the environment which threaten the existence of the caves. The Audit noted that there was no adequate space between the caves and the Mining Plots that would reduce the risk of threatening the existence of the caves.

Figure 4.4: Sketched Map of AmboniCaves Surrounded with Mining Plots Cultural Heritage Site

The Audit Team observed abandoned open pits around the Amboni Caves as the result of Mining activities as evidenced in **Photo 4.3**

Photo 4.3: Evidence of abandoned Open Pits around the Amboni Caves that threaten existence of the caves

Furthermore the Audit Team observed destructed cave number 8 as the results of the intruders who conducted quarrying mining activities at the cave, thus also threatening the existence of the caves as evidenced in **Photo 4.3.**

Photo 4.4: Destructed Number 8 Cave from Quarrying Activities at Amboni Site

- **Uncoordinated Conservation Strategies**

Plan for rehabilitation or construction of cultural heritage sites owned by Local Government Authorities, Religious and private institutions were supposed to be done by the responsible entities in consultation with Director of Antiquities.

The Audit Team noted an uncoordinated conservation strategy that was attributed to different ownership of the heritage sites. The presence of cultural heritage sites that were owned by different actors such as Religious Institutions and Local Government Authorities limited direct intervention implementation of preservation and conservation strategies.

Historic towns were under the ownership of Local Government Authorities; Graves, mosques and churches were under Religious institutions; protected objects, geological and historic settlements were under the Director of Antiquities; and other historical buildings were owned privately such as by Political Parties.

The Director of Antiquities was responsible for the preservation and conservation of all cultural heritage sites. It was however noted that, some Cultural Heritage Sites that were owned by religious institutions and LGAs performed day-to-day preservation of Cultural Heritage Sites independently. The audit noted the absence of staff from the Director of Antiquities to heritage sites that were not owned by DoA.

Consequently, inadequate preservation and conservation of cultural heritage sites led to the deterioration or destruction of gazetted historical buildings as observed in the **Photo 4.5**;

Photo 4.5: Deterioration of graves at Mbuamaji in Dar Es Salaam, November, 2021

4.5 Inadequate Preservation and Conservation of Museums' Collections and Cultural Heritage Sites

4.5.1Limited equipment to Facilitate Preservation and Curation of Museum Collections

The audit team noted unavailability of all necessary tools that ensure the sustainable well-being of museum collections. Conservation facilities and appliances such as thermometers, hydrometers, lux meters, desiccators, refrigerators, and blowers were needed to maintain the required conditions of various museums' collections.

Inadequacy of the above-mentioned appliances exacerbates the deterioration of the museum collections due to factors such as light, humidity, temperature, and sunrays among others. The Figure below reveals the shortage of conservation facilities needed to ensure the sustainability of museum collections.

4.5.2Unavailability of Conservators at Several Cultural Heritage Sites

The Audit noted the shortage of professional conservators needed to serve at Cultural Heritage Sites. Conservators were highly needed to ensure the sustainability of cultural heritage sites through provisioning technical advice and overall management of cultural heritage sites and contents therein. The highest gaps in skilled personnel are as follows: Principal Conservators I (78% of the required personnel), Conservators II (44%) Principal Conservators of Antiquities I (50%), and Senior Technician I (50%).

Furthermore, the audit noted the unavailability of needed skills namely; Technicians, Civil Engineering, and Architectural Engineering to ensure the long-term survival of gazetted historical buildings in the country. The available skills with backgrounds in Archaeology, Anthropology, Geography, Biology, Botany, History and Geology were not competent enough to ensure monitoring during the rehabilitation or construction of historic buildings in the country.

4.6Inadequate Monitoring and Follow-up Mechanisms on the Performances of Museums and Heritage Sites

The Audit noted inadequate mechanisms on monitoring and follow-up on the performances of Museums and Heritage Sites in the country as evidenced through:

Inadequate Conservation Activities of Heritage Sites in the Country

Based on the review of MNRT's achievement reports (2015-2019), the audit team found out that, of the visited 12 cultural heritage sites, only 5 had undergone major restorations and rehabilitations with painting. These were; the MwalimuNyerere Memorial House, Kunduchi Ruins, Amboni Caves, MungoniwaKolo Rock Art Site, and Kondoa Rock Shelter.

Inadequate monitoring and evaluation of restoration, rehabilitation and development proposals of urban and rural and Cultural Heritage Site

Seven out of 12 cultural heritage properties visited by the audit team were in poor conservation status for having been left unattended by DoA. These heritage properties are; Cultural Heritage Site Chongoleani Wall, Chikalikani Walls, Kisikimto Graves and Mosque, Dar Es Salaam City Historic Buildings, Mbuamaji Mosque and Graves as well as German Bridge and Fliessbach Grave.

MNRT through DoA did not monitor and evaluate the restoration rehabilitation and development proposal of urban and rural, historic built heritage, buildings, structures and archaeological sites. This was evidenced by the existence of Cultural Heritage Sites that had deteriorated over the years to the extent that they failed to maintain the original structures.

Inadequate monitoring of the implementation of conservation, development and management plans for cultural heritage sites

Most of the declared cultural heritage sites visited by the audit team had no management plans for the period under covered by this audit that could guide the technical conservation (restoration and rehabilitation), as well as access and utilization of those sites.

Inadequate utilization of information for developing Museums and Heritage Sites in the Country

The Audit noted that the absence of monitoring by MNRT led to a lack of information for use by the Ministry to issue an appropriate recommendation to key stakeholders to ensure future improvement. At MNRT, there was no evidence of any recommendation sent to key stakeholders resulting from monitoring done by the Ministry of Natural Resources and Tourism.

5.0 AUDIT CONCLUSION

Based on the findings and as assessed by the overall objective of the audit, it is concluded that the Ministry of Natural Resources and Tourism and the National Museum of Tanzania have inadequately managed the national museums and Cultural Heritage Sites to ensure long-term survival and enhancement of Tanzania's cultural heritage sector.

This was evidenced through inadequate development of Museums and Heritage Sites as well as underperformance of the Museums and Heritage Sites. It was noted that only 14% of heritage sites in the country were operating with the availability of qualified human resources and were open for public access for tourism and education purposes.

6.0 AUDIT RECOMMENDATIONS

Recommendations to the Ministry of Natural Resources and Tourism

The Ministry of Natural Resources and Tourism is urged to:

1. Develop Local standards governing the establishment of national Museums and declaration of Heritage Sites in the country;

2. Utilize research results in developing policies and guidelines for the conservation and preservation of Museums' collection and Heritage Sites in the country; and

3. Create a research fund to enable qualified Tanzanians to undertake fieldwork in heritage areas directed at expanding spatial coverage and salvaging threatened heritage relics.

Recommendations to the National Museum of Tanzania

The National Museum of Tanzania is urged to:

1. Develop a mechanism for the conservation and preservation of Museums collection and Cultural Heritage Sites;

2. Enhance effective utilization of resources in order to improve conservation and preservation of museum collection and development of Cultural Heritage Sites; and

3. Have in place a monitoring system on all Museums and Cultural Heritage Sites in the country.

7.0 REFERENCES

1. Battle, Stephen, and Tony Steel (2001) Conservation and Design Guidelines for Zanzibar Stone Town. Geneva: Aga Khan Trust for Culture

2. ICOM (2004) International Council of Museum Code of Ethics

3. ICOM (2013) International Council of Museum Code of Ethics

4. ICOMOS Charter (1987) Charter for the Conservation of Historic Towns and Urban AreasWashington Charter.

5. ICOMOS Charter (2003) Principles for the analysis, conservation and structural restoration of architectural heritage.

6. Ministry of Natural Resources and Tourism (2016) Medium-Term Strategic Plan for 2016/17 - 2020/21, Tanzania

7. Ministry of Natural Resources and Tourism (2018) Memorandum of Understanding on Transfer of Historical Sites

8. Ministry of Natural Resources and Tourism (2018) National Cultural Heritage Register, Tanzania

9. National Museum of Tanzania (2016) Functions of NMT Organization Structure, Tanzania

10. Noel BisekoLwoga& Musa Said Mwitondi (2018) Challenges Facing the Conservation of Historic Buildings through Local Eyes: The Swahili Town of KilwaKivinje, Tanzania, Heritage & Society

11. United Republic of Tanzania (1999) Tanzania National Tourism Policy

12. United Republic of Tanzania (2007) Tanzania Cultural Policy

13. United Republic of Tanzania (2008) Guideline for the Conservation of Historic Buildings and Structures in Tanzania

14. United Republic of Tanzania (2008) Tanzania Antiquities Policy

15. United Republic of Tanzania (2008) Tanzania Cultural Heritage Policy

16. United Republic of Tanzania (2016) National Museum of Tanzania Strategic Plan for the year 2016/17- 2020/21

17. United Republic of Tanzania (2021) Museum Sector Survey

18. United Republic of Tanzania (RE 2002) Antiquities Act, Cap 333

19. United Republic of Tanzania National Commission for UNESCO (2020)Overview Challenges and Management of World Heritage Sites In Tanzania, Department of Culture and World Heritage,Tanzania

20. United Republic of Tanzania, (1980) Tanzania National Museum Act