

ENVIRONMENTAL AND SOCIAL IMPACT STATEMENT (EIS)

FOR THE PROPOSED UPGRADING AND EXPANSION OF NGORONGORO SOPA LODGE
LOCATED WITHIN NGORONGORO CONSERVATION AREA IN NGORONGORO
DISTRICT, ARUSHA REGION.

PROPONENT



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Submission date: June 24th, 2025

EXECUTIVE SUMMARY

This executive summary is structured according to the requirements of the Environment Impact Assessment and Audit Regulations of 2005, Part V, section 18 (3).

Project Title: Environmental And Social Impact Assessment for Ongoing Renovation and Establishment of Presidential suites at the Ngorongoro Sopa Lodge Within Ngorongoro Conservation Area in Ngorongoro District, Arusha Region.

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❖ Background

Ngorongoro Sopa Lodge, which is one of the oldest lodges located in the Ngorongoro Conservation Area is owned and managed by the Consolidated Tourist and Hotels Investment Limited. The Lodge that started operations in the NCA in 1992 forms a chain of the Sopa lodges, which are managed by the Company in Kenya and Tanzania. In order to catch up with the current clients' tastes and preferences and smoothen the future management of the facility, the Consolidated Tourist and Hotels Investment Limited was obliged to carry out an intensive renovation of the guest rooms and demolish and rebuild the main house; the activities, which are going on. The Company also proposes to expand the Lodge by constructing the presidential suites and their associated amenities including the main house and the common swimming pool.

The existing facilities, which are located on a currently developed 10.1 acres include 25-one storey units, majority of them under renovation and each comprising four (4) rooms, which in total have 200 beds; The main house, which has been demolished and will be rebuilt with modifications; staff and tourist drive guides' village, workshop and other utility facilities including generators, underground fuel storage tank with a pump machine and water storage tanks. The Company requested the Ngorongoro Conservation Area Authority to construct new presidential suites and associated service facilities on a 3.04-acre piece of land leased to Ngorongoro Sopa Lodge but it is currently undeveloped. The estimated total investment for face-lifting the Lodge is Tanzania Shillings 47,300,000,000.

❖ **Undertaking of EIA study**

The NCAA directed the Consolidated Tourist and Hotels Investment Limited to conduct an environmental impact assessment of the proposed construction of the new presidential suites within the unutilized piece of land, which is 3.04 acres of the total 13.5 acres allocated to the Company as per Lease Agreement before the request could be considered. For that reason, the proponent commissioned Dr. Victor Runyoro who is an Ecological Economist and Mr. Gerald Gisiput; an Environmentalist of P.O. Box 15070 Arusha to conduct the environmental impact assessment of the proposed project to comply with the Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021. Both environmental experts are registered and practicing environmental experts and allowed to conduct the study in the areas of wildlife and tourism.

The environmental experts visit to the Ngorongoro Sopa Lodge in June, 2024 established that, despite that the Lodge was subjected to environmental audit in 2015, besides the construction of the proposed new presidential wing, other activities to be conducted will involve major overhaul that oblige the entire project to be subjected to an environmental impact assessment.

❖ **Project rationale**

Prospects for growth of the tourism sector in Tanzania are high as indicated by an increasing visitor number for both international and domestic to the Ngorongoro Conservation Area. Despite the encouraging growth in the number of visitors to the Ngorongoro Conservation Area, deficit in the number of guest beds has persevered such that during high tourist season the high-end accommodation facilities, which are mainly provided in lodges and permanent tented camps are overbooked. The fact that there will be more visitors to the Area in response to among other marketing strategies; the historical tourism documentaries; “the Royal Tour” and “the Amazing Tanzania”, which Her Excellence Dr. Samia Suluhu Hassan; the President of the United of Tanzania and His Excellence Dr. Hussein Mwinyi; the President of the Revolutionary Government of Zanzibar participated in 2022 and 2024 respectively, the need for increasing visitor beds in high-end accommodation facilities is inevitable. This could be achieved through establishment of new accommodation facilities, upgrading the existing ones, which meet the set criteria or expansion of those, which are present but will not compromise the environmental integrity.

Despite the fact that the Ngorongoro Sopa Lodge has earned several respects for its long-standing appreciation of environmental conservation at the respective site in particular, the proposed project is legally required to be subjected to an environmental impact assessment. The current environmental impact assessment was therefore commissioned to comply with the Environmental Management Act, Cap. 191 and associated Regulations as well as the Ngorongoro Conservation Area Private Concession Policy, Strategy and Procedures (2019-2024). The main objective of conducting this environmental impact assessment is to ensure that development activities throughout the implementation phases of the facility including the ongoing renovation, reconstruction of the already demolished main house and the construction of the proposed new presidential suites and their associated amenities will be carried out in a manner that is environmentally friendly, socially acceptable and economically viable.

❖ **Scoping study**

The environmental impact assessment, which started with scoping was conducted in June and July, 2024 using various approaches, which are commensurate with the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the “Principal Regulations”; the Environmental Impact Assessment and Audit Regulations, 2005. The approach included; (i) discussion with the proponent (ii) review of baseline information (iii) collection of the physical and ecological information from the site (iv) stakeholders’ consultation, and (v) preparation of an environmental impact statement, which consists among other requirements the environmental and social mitigation and monitoring plans. Environmental and social impact assessment considered all the envisioned phases of the project implementation including renovation of the guest blocks, reconstruction of the demolition structures and construction of new facilities; operation; and decommissioning. Three types of the project boundariess namely institutional, temporal and spatial were considered during the environmental impact assessment study. Further, project alternatives, which were felt that may achieve more or less similar objectives to the proposed project were considered. These included the no project, size, design, location and technology alternatives.

The study revealed that the proposed improvement and expansion of the Ngorongoro Sopa Lodge will contribute to reducing shortage in tourist beds in the NCA, increase revenue for the Central Government, the Ngorongoro District Council and the Ngorongoro Conservation Area Authority, create employment opportunities to Tanzanians, and will diversify income generating activities for neighbouring communities within and outside the Conservation Area. Enhancement actions for the positive impacts are recommended. The project will however cause some negative environmental impacts, which mitigation measures that aim at avoiding, eliminating or minimizing them are also suggested.

❖ **Cost benefits analysis**

Environmental cost benefit analysis is assessed in terms of the negative versus positive impacts. The potential benefits, in terms of financial and social benefit are significant. Similarly, the environmental impacts can be reasonably mitigated and the financial resources needed to mitigate negative impacts, when compared to the required investment, are relatively small and manageable. The facility will create employment and other sources of income to surrounding communities in Ngorongoro and Districts such as the sale of foodstuffs and opportunities for providing interpretative services and business people at Karat Township and Arusha city where most of the construction materials will be purchased. Visitors’ spending will create multiplier effects particularly to businesspeople operating craft shops along the Arusha-Karatu highway. Salaries for those who will be employed by the project will extend beyond employees to benefit other people including dependents and relatives. In view of the above, the proposed project aligns well with the government initiatives of creating employment opportunities, enhancing economic growth and contributing toward poverty alleviation among Tanzanians

❖ **Environmental and Social Management Plan**

The environmental and social management plan, which consists of the impacts that were identified, possible enhancement actions and mitigation measures, the lead implementer of the

plan who is largely the proponent and the indicative budget for impact management are presented in the report. Similarly, the monitoring plan, which focuses mainly on the impacts that are be perceived to be significant showing the monitoring frequency, parameters and target in addition to those contained in the mitigation plan has also been prepared.

Although the period of lease for the respective site will be 33 years as provided in the Ngorongoro Conservation Area Authority -Private Concession Policy, Strategy and Procedures (2019-2024) with effect from 2023 when the lease agreement between the investor and the Authority was signed, a primary decommissioning plan has been prepared and presented in this environmental impact statement. However, the update shall be done at the time of decommissioning based on prevailing condition and all decommissioning requirements as will be provided for in the prevailing Regulations, shall be adhered to.

❖ **Proposed Monitoring and Auditing**

All of the management plans make provision for monitoring and evaluation. Special attention shall be given to the monitoring arrangements relating to ecological changes, environmental pollution, occupational health and safety, facility operational and emergency preparedness and response. The reported impacts and incidents will be captured on a database to ascertain trends and track progress in the implementation of preventive and corrective actions, and benchmarking against other, similar operations. Depending on the level of severity of accidents and incidents; The proponent shall embark on the practice of investigating them.

During Project Implementation, the proponent shall monitor the health and safety of personnel, and visitors to the project premises, in compliance with legislative requirements. Emergency incidents should be reported to the relevant authorities. The reported impacts and incidents should be captured on a database to identify weakness in the emergency response plan and track progress in the implementation of preventative and corrective and benchmarking against other similar operations.

❖ **Decommissioning plan**

Decommissioning plan shall be prepared and submitted to NCAA for endorsement and thereafter submitted to NEMC for approval. Notwithstanding the above, environmental experts have identified site restoration; handing over of some the project buildings to NCA; minimized water utilization and waste generation in the park and surrounding areas and reduced risk of introducing invasive alien plant species as positive impacts during decommissioning. The negative ones are, laying off employees; loss of some economic opportunities by local communities; reduced visitor-beds in the park; loss of revenue to the Central Government, NCAA, Ngorongoro and Karatu Districts Council and the local community and management of rubble from demolished structures.

ACKNOWLEDGEMENTS

The Consolidated Tourist and Hotels Investment Limited is very grateful to all persons who in one way or another supported the completion of this work. The architects and environmental experts contributed their expertise tirelessly to ensure that this report is diligently prepared and completed in time. We are very thankful to them all. We acknowledge decisions of the Board of Directors and the management team, which cooperated very closely and tirelessly with environmental experts throughout the period of this study.

We are appreciative to the Management of Ngorongoro Conservation Area Authority for allowing the Consolidated Tourist and Hotels Investment Limited to facelift its facility that was initially developed in 1992. Members of staff from the Ngorongoro Conservation Area Authority, the Ngorongoro District Council, the Internal Drainage Water Basin Board, the National Commission for the United Nations Education, Science and Culture Organization, the Fire and Rescue Force and the Occupational Safety and Health Authority devoted their precious time to comment on issues pertaining to the establishment of the proposed project for the purpose of improving this environmental impact statement and subsequently the implementation of the project. We are very thankful to all of them. Last but not least we are indebted to the National Environment Management Council and members of the Technical Advisory Committee whose comments shaped this report into its current structure. The following members who are unregistered environmental experts are acknowledged for their input and technical analysis during field visits, preparation and compilation of this report:

- Mr. Germany Qaghay -B. A in Tourism and Cultural Anthropology
- Mr. Clement Mzinga - B.sc in Environmental Science and Management
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Table of Contents

EXECUTIVE SUMMARY	i
LIST OF TABLES.....	xi
LIST OF FIGURES	xii
LIST OF APPENDICES	xiii
ACRONYMS AND ABBREVIATIONS	xiv
CHAPTER ONE	1
1.0. INTRODUCTION.....	1
1.1. Background Information.....	1
1.2. Justification of the Proposed Project	3
1.4. Company Profile.....	6
1.5. Requirement for the Conduction of an Environmental Impact Assessment.....	8
1.6. Objectives of Conducting this EIA.....	9
1.7. Scope of Work.....	10
1.8. Methodology	10
1.9. Report Structure.....	13
CHAPTER TWO.....	14
2.0. DESCRIPTION OF THE PROPOSED PROJECT	14
2.1.1. New guest rooms at the proposed presidential wing	16
2.1.2. Staff accommodation facilities	17
2.3.2. Energy sources:	20
2.4. Waste management facilities	21
2.5.3. Operation Phase	29
2.5.3.1. Occupational and public safety and health	33
2.5.4. Types, sources and management of waste during operation	35
CHAPTER THREE	39
3.1. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORKS.....	39
3.1. Overview	39
3.2. Policies	39
3.2.1. The National Environmental Policy, 2021	39
3.2.2. The National Tourism Policy, 1999	39
3.2.3. The National Wildlife Policy, 2007.....	40
3.2.5. The National Energy Policy, 2015.....	41
3.2.7. The National Trade Policy, 2003.....	42
3.2.8. The National Land Policy, 1995.....	42
3.2.10. The National Rural Development Policy, 1996	43
3.2.11. The National Construction Industry Policy, 2002.....	44
3.2.12. The National Employment Policy, 2008	44
3.2.13. The National Policy on Gender and Equality, 1999.....	44
3.2.14. The National Women and Gender Development Policy, 2000	45
3.2.15. The National HIV/AIDS Policy, 2001	45

3.2.16.	The National Health Policy, 2007	45
3.2.17.	The National Economic Empowerment Policy, 2004	46
3.2.18.	The Occupational Health and Safety Policy, 2009	46
3.2.19.	The Cultural Policy, 1997.....	46
3.2.20.	The Forest Policy, 1998.....	47
3.2.21.	The National Beekeeping Policy, 2012	47
3.2.22.	The National Livestock Policy, 2010.....	48
3.3.	Relevant Legislation	49
3.3.1.	The Environmental Management Act, Cap. 191	49
3.3.2.	The Wildlife Conservation Act, Cap. 283	49
3.3.3.	Ngorongoro Conservation Area Act, Cap. 284.....	49
3.3.4.	The Tourism Act, Cap. 65.....	50
3.3.5.	The Land Act, Cap. 113.....	51
3.3.6.	The Village Land Act, Cap. 114.....	51
3.3.7.	The Forest Act, Cap 323.....	51
3.3.8.	The Antiquities Act, Cap. 333	52
3.3.9.	The Bee-keeping Act, Cap 223.....	53
3.3.10.	The Water Resources Management Act, Cap. 331.....	53
3.3.11.	The Land Use Planning Act, Cap. 116	53
3.3.12.	The Animal Diseases Act Cap. 156	54
3.3.14.	The Local Government (District Authorities) Act, Cap. 287	55
3.3.15.	The Companies Act, Cap. 212.....	55
3.3.16.	The Business Activities Registration Act, Cap. 208	56
3.3.17.	The Income Tax Act, Cap. 332.....	56
3.3.18.	The Standard Act, Cap. 130.....	57
3.3.19.	The Employment and Labour Relations Act, Cap. 366.....	57
3.3.20.	The HIV and AIDS (Prevention and Control) Act, Cap. 431	58
3.3.21.	The National Social Security Fund Act, Cap. 222.....	59
3.3.22.	The Occupational Health and Safety Act, Cap. 297	60
3.3.23.	The Public Health Act, Cap. 99.....	60
3.3.24.	The Fire and Rescue Force Act, Cap. 427	60
3.3.25.	The Workers Compensation Act, Cap. 263	61
3.3.26.	The Tanzania Investment Act, Cap. 38.....	61
3.3.28.	The Contractors Registration Act, Cap. 235.....	62
3.3.29.	The Architectures and Quantity Surveyors Act, Cap. 269.....	62
3.3.30.	Persons with Disabilities Act, Cap. 183.....	62
3.3.31.	The Tanzania Meteorological Authority Act No. 2 of 2019.....	63
3.4.	Relevant Regulations	63
3.4.1.	The Environmental Management (Environmental Impact Assessment and Audit (Amendment) Regulations, 2024.	63

3.4.2.	The Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021	64
3.4.3.	The Environmental Management (Air Quality Standards) Regulations, 2007	64
3.4.4.	The Environmental Management (Water Quality Standards) Regulations, 2007	65
3.4.5.	The Environmental Management (Solid Waste Management) Regulations, (Amendment) Regulations, 2016.....	65
3.4.6.	The Environmental Management (Hazardous Waste Control and Management) Regulations, 2021	66
3.4.7.	The Environmental Management (Quality Standards for Control of Noise and Vibration Pollution) Regulations, 2015	66
3.4.8.	The Environmental Management (Soil Quality Standards) Regulations, 2007	67
3.4.9.	The Environmental Management (Prohibition of Plastic Carrier Bags and Plastic Bottle Cap Seals) Regulations, 2022	67
3.4.11.	The Environmental Management (Fees and Charges) (Amendment) Regulations, 2021	68
3.4.12.	The Wildlife Conservation (Wildlife Corridors, Dispersal Areas, Buffer zone and Migratory Routes) Regulations, 2018.....	68
3.4.13.	The Wildlife Conservation (Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Implementation) Regulations, 2018	69
3.4.14.	The Fire and Rescue Force (Safety Inspections and Certificates) (Amendment) Regulations, 2017	69
3.4.15.	The Fire and Rescue Force (Precaution and Building) Regulations, 2015	70
3.5.	National Strategies and the NCAA Guidelines	71
3.5.1.	The Tanzania Development Vision 2025	71
3.5.2.	The Third Five-Year National Development Plan (2021/2022-2025/2026)	71
3.5.3.	Ngorongoro Conservation Area –Management Zone Plan (2021-2026)	72
3.6.	Conventions and Agreements	74
3.6.2.	The Lusaka Agreement, 1994.....	75
3.6.5.	The Convention on International Trade in Endangered Species, 1973	77
3.6.6.	The Convention on the Conservation of Migratory Species of Wild Animals, 1979	77
3.6.7.	The Convention on Biological Diversity, 1992.....	77
3.6.8.	The United Nations Framework Convention on Climate Change, 1992	78
3.6.9.	The International Labor Organization Conventions	78
3.6.10.	The International Code of Conduct on the Distribution and Use of Pesticides	79
3.6.11.	The International Plant Protection Convention, 1952.....	80
3.7.	Project Administrative Framework	80
	CHAPTER FOUR.....	86
4.0.	DESCRIPTION OF THE SITE FOR THE PROPOSED PROJECT.....	86
4.1.	Location and Accessibility	86
4.4.	Geology and soil	87
4.6.	Biological Resources.....	88
4.6.1.	Vegetation	88

4.6.2. Wild animals	88
4.6.3. Birds	89
4.7. Cultural resources	89
4.8. Ethnography	89
4.9. Conservation status.....	89
4.10. Tourist trend in NCA.....	90
4.11. Tourism accommodation facilities.....	90
4.12.2. Liquid waste	92
CHAPTER FIVE	93
5.0. STAKEHOLDERS' PARTICIPATION AND CONCERNS	93
5.1. Legal Requirement.....	93
CHAPTER SIX	100
6.0. ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES	100
6.1. Overview	100
6.2. Project Boundaries.....	100
6.2.1. Institutional boundary	100
6.2.2. Temporal boundary	101
6.2.3. Spatial boundary	101
6.4. Project Alternatives	105
6.4.1. No Project Alternative	105
6.4.2. Size alternative.....	105
6.4.3. Design alternative	106
6.4.4. Location alternative	107
6.4.6. Technological alternative.....	107
CHAPTER SEVEN	110
7.0. POTENTIAL ENVIRONMENTAL IMPACTS AND THE PROPOSED MITIGATION MEASURES AND ENHANCEMENT ACTIONS	110
7.1. Significant impacts and recommended mitigation and enhancement actions	110
CHAPTER EIGHT.....	121
8.0. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....	121
8.1. Overview.....	121
8.1. Implementation of the ESMP	121
8.2. The ESMP Implementation Cost.....	121
CHAPTER NINE	138
9.0. ENVIRONMENTAL AND SOCIAL MONITORING PLAN	138
9.1. Overview	138
9.2. Environmental Monitoring.....	138
9.3. Environmental Audit	139
9.4. Estimated cost for the EMP Implementation	139
CHAPTER TEN.....	163
10.0. RESOURCE EVALUATION OR COST-BENEFIT ANALYSIS.....	163
10.1. Benefits Related to the Project	163
10.2. Cost Related to the Project	164

CHAPTER ELEVEN	165
11.0. DECOMMISSIONING PLAN	165
CHAPTER TWELVE	166
12.0. SUMMARY AND CONCLUSIONS	166
12.1. Summary	166

LIST OF TABLES

Table1. 1: Summary of existing and proposed guest rooms.....	2
Table1. 2: Trends in tourist numbers to NCAA between 2015/2016 and 2022/2023.....	4
Table1. 3: The summary of the investors' profile.....	6
Table 2. 1: List of vehicles, machines and equipment that will be transported to the site.....	23
Table 2. 2: Types and sources of building materials.....	25
Table 2. 3: Summary of the total investment cost for the proposed modernization and expansion of the Ngorongoro Sopa Lodge.	27
Table 3. 1: Summary of roles and responsibilities of key institutions	82
Table 5. 1: Specific concerns and the proponent's responses	95
Table 6.1: Summary of the identified potential impacts and their levels of significance.....	102
Table 7. 1: Potential environmental impacts and proposed mitigation measures	110
Table 8.1: Environmental and social mitigation plan.....	122
Table 9. 1: Environmental and social plan.....	140

LIST OF FIGURES

Figure 1. 1: Site layout plan of the existing, under renovation, demolished and the proposed new presidential suites at Ngorongoro Sopa Lodge.....	3
Figure 1. 2: The location of the Ngorongoro Sopa Lodge in relation to the NCA management zones (Source: NCA-Zone Management Plan (2021-2026)).....	5
Figure 1. 3: Location of Sopa Lodges operated by the Consolidated Tourist and Hotels Investment Limited in Kenya and Tanzania	7
Figure 1. 5: Location of a point recommended for the borehole drilling in relation to closer tourist facilities in the NCA (Source: MMJ Drilling and Consultancy Limited Hydrogeological and Geophysical Survey Report, December, 2023)	20
Figure 4. 1: Rainfall Patterns in the NCA (Source: NCAA, 2018 extracted from Homewood and Rodgers, 1991)	87
Figure 4. 2: Location of the Ngorongoro Sopa Lodge in relation to the nearest permanent accommodation facility and Lemala entrance gate into the Ngorongoro Crater.....	91

LIST OF APPENDICES

Appendix 1: Permit from the NCAA to increase the number of guest beds at the existing Ngorongoro Sopa Lodge	170
Appendix 2: Letter from the NCAA Requiring Consolidated Tourist and Hotels Investment Limited to Undertake an EIA of the Proposed Upgrading and Construction of New Presidential Suites within the Leased Land at Ngorongoro Sopa Lodge.....	173
Appendix 3: The Company’s Certificate of Incorporation.....	174
Appendix 4: The Company’s Tax Payer’s Identification Certificate (TIN).....	175
Appendix 5: TALA License.....	176
Appendix 6: Names, Signatures and Institutions of People who were Consulted.....	177
Appendix 7: NCAA Official Comments.....	178
Appendix 8: UNESCO Comments	180
Appendix 9: TAWIRI Comments	182
Appendix 10: NEMC Letter for Approval of ToR.....	185
Appendix 11: Approved Terms of Reference for Conducting the Current EIA	187
Appendix 12: Hydrogeological and Geophysical Survey for Sinking a Borehole	193
Appendix 13: Emergency and Preparedness Response Plan: September, 2024.....	216
Appendix 14: Site layout plan showing existing structures and proposed construction	221
Appendix 15: Architectural drawings for proposed renovation of existing facilities.....	222
Appendix 16: Architectural drawings for proposed expansion (new presidential suites)	241
Appendix 17: Proposed Waste water treatment plant design.....	257

ACRONYMS AND ABBREVIATIONS



AC	Alternating Currency
AIDS	Acquired Immuno-Deficiency Syndrome
BBQ	Barbeque
BOD	Biochemical Oxygen Demand
BOQ	Bill of Quantities
Cap.	Chapter
CBO	Community-Based Organization
CBD	Convention on Biodiversity
CD	Compact Disc
CHIA	Cultural Heritage Impact Assessment
CITES	Convention on International Trade on Endangered Species
CO ²	Carbon-dioxide
CRB	Contractors Registration Board
CSP	Corporate Strategic Plan
CSR	Corporate Social Responsibility
dB	Decibel
DVD	Digital Versatile Disc
EA	Environmental Audit
EAC	East African Community
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
ESIA	Environmental and Social Impact Assessment
EMA	Environmental Management Act
EMP	Environmental and Social Monitoring Plan
ERB	Engineers Registration Board
ESMP	Environmental and Social Mitigation Plan
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GMP	General Management Plan
GPS	Global Positioning System
HIV	Human Immuno-Virus
ICOMOS	The International Council for Monuments and Sites
ICCROM	The International Centre for the Study of the Preservation and Restoration of Cultural Property
IEA	Initial Environmental Audit
ILO	International Labor Organization
ITCZ	Inter-Tropical Convergence Zone
IPPC	International Plant Protection Convention
IUCN	International Union for Conservation of Nature
JMT	Jamhuri ya Muungano wa Tanzania
KVA	Kilovolt Ampere
Kg	Kilogramme
Km	Kilometres

LGA	Local Government Authority
LPG	Liquefied Petroleum Gas
LNG	Liquified Natural Gas
MAB	Man and Biosphere
MNRT	Ministry of Natural Resources and Tourism
MTS	Multi0Trading System
MZP	Management Zone Plan
M ²	Square Meters
Mg/kg	Milligrams per Kilogramme
Mg/L	Milligrams per Litre
m/S ²	Amplitude of Vibration Velocity
NCA	Ngorongoro Conservation Area
NCAA	Ngorongoro Conservation Area Authority
NEMC	National Environment Management Council
NFPA	National Fire Protection Association
NHFR	Northern Highland Forest Reserve
NHIF	National Health Insurance Fund
NGO	Non-Governmental Organization
NSGD	National Strategy for Gender Development
NRDP	National Rural Development Policy
NSSF	National Social Security Fund
OSHA	Occupational Safety and Health Authority
OUV	Outstanding Universal Value
PA	Protected Area
PM	Particulate Matter
PPM	Parts Per Million
PPE	Personal Protective Equipment
PV	Photovoltaic
PVC	Poly-Vinyl Chloride
RDS	Rural Development Strategy
SDG	Sustainable Development Goals
SENAPA	Serengeti National Park
TAC	Technical Advisory Committee
TACAIDS	Tanzania Commission for Aids
TAH	Tanzania Association of Hoteliers
TATO	Tanzania Association of Tour Operators
TAWIRI	Tanzania Wildlife Research Institute
TBS	Tanzania Bureau of Standards
TDV	Tanzania Development Vision
TIC	Tanzania Investment Centre
TIN	Taxpayer Identification Number
TMA	Tanzania Meteorological Society
ToR	Terms of Reference
TRA	Tanzania Revenue Authority

TZS	Tanzania Shillings
TV	Television
TWA	Time-Weighted Average
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNESCO	United Nations Education, Science and Culture Organization
USD	United States Dollar
UTM	Universal Transverse Mercator Coordinate System
VHF	Very High Frequency
WCA	Wildlife Conservation Act
WHS	World Heritage Site

DECLARATION

We, the undersigned declare that the contents of this environmental impact statement are true to the best of our knowledge.

Names of Experts	Signature
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GERALD X. GISIPUT – EIA & EA Expert (Environmentalist)	

CHAPTER ONE

1.0. INTRODUCTION

1.1. Background Information

Ngorongoro Sopa lodge, which is one of the oldest lodges located in the Ngorongoro Conservation Area (NCA) is owned and managed by the Consolidated Tourist and Hotels Investment Limited. The Lodge that started operations in the NCA in 1992 forms a chain of Sopa lodges, which are managed by the Consolidated Tourist and Hotels Investment Limited in Kenya and Tanzania. Despite earning several prestigious awards mainly with respect to the low environmental impact venture, based on the recommendations made from the Environmental Audit that was conducted in 2015, there were significant environmental and social requirements that needed to be addressed to ensure regulatory compliance. Since then the Company has been taking steps continuously to improve environmental conservation and enhance the overall guest experience by adopting advanced technologies and sustainable practices.

Nonetheless, in order to catch up with the current clients' tastes and preferences and smoothen the future management of the facility, the Consolidated Tourist and Hotels Investment Limited was obliged to carry out an intensive renovation of the guest rooms and demolish for the purpose of rebuilding the main house; the activities, which are going on. Further, the Company through letter with reference number CTHI/NCAA/13.9.2023 dated 13th September, 2023 (Appendix 1) requested the NCA to construct 20 new presidential suites on a piece of land leased to Ngorongoro Sopa Lodge but was not utilized yet since the operations commenced in 1992.

The request from the proponent necessitated the carrying out of a joint ground-truthing excise that was conducted between the Ngorongoro Conservation Area Authority (NCAA) and the investor. The survey revealed that the existing structures were established on 10.1-acre piece of the and the remaining 3.4-acre of the total 13.5 acres allocated land as per the Lease agreement could be utilized for addition of the proposed presidential suites (Appendix 1). Thus, the NCAA confirmed that the proponent's request is in line with Section "F" of the Lease Agreement .

The Lease Agreement that was signed between the NCAA and the Consolidated Tourist and Hotels Investment Limited on 30th June, 2023 allows the investor to operator a Lodge with a total of 110 rooms (220 beds) (Appendices 1 and 2). However, the existing property consists of 100 rooms (Appendix 1), which necessitated the Authority to direct the Company to presidential suites that will not exceed 20 beds, which translates into 10 rooms. Nonetheless the NCAA permitted for flexibility where Consolidated Tourist and Hotels Investment Limited was allowed to increase the number of the beds in presidential suites above 20 beds, provided the increased number at this new wing corresponds with the decrease in the same number in the existing facility such that the aggregate number of beds in both the present and the proposed wings does not exceed 220 (Appendix 1).

Through letter with reference number CTHI/NCAA/04/03/2024 of 04th March, 2024 the Consolidated Tourist and Hotels Investment Limited asked for permission to clear the area for the construction of the proposed presidential suites. In response, the NCAA directed the investor

to undertake an environmental impact assessment (EIA) and submit a clearance certificate together with an environmental impact statement (EIS) for consideration before clearing the site to comply with the Environmental Management Act (EMA) Cap. 191 and its associated Regulations (Appendix 2).

The NCAA Corporate Strategic Plan (CSP) (2021/2022-2025/2026) and the Private Concession Policy, Strategy and Procedures (2019-2024) also advocate for subjecting development project in the NCA to the EIA study. This is because both the CSP and the Private Concession Policy, Strategy and Procedures guide the NCAA on overcoming barriers and guarantee the fair, equitable and rapid growth of private businesses in the NCA for sustainable conservation while keeping the interests of the local people and tourists in the process.

The Consolidated Tourist and Hotels Investment Limited will comply with the directive of the NCAA of having an aggregate of not more than 220 guest beds within a 13.5-acre piece of land that is leased to the Company. The Company is currently renovating 21 out of the 25 existing guest units. Each unit consists of two rooms (4 beds) at the ground and other two rooms (4 beds) at the first level; all of them totaling to 168 guest beds. Three of the existing guest rooms will be demolished and one retained to accommodate the Company's Management staff and Directors when visiting the facility. The remaining 52 guest beds will therefore be established in a 3.04-acre piece of land where 23 standard category rooms (46 beds) and three luxury suites (6 beds) will be constructed. The summary for total guest rooms and associated beds that will be available at the Ngorongoro Sopa Lodge is presented in Table 1.1

Table 1.1: Summary of existing and proposed guest rooms

Status	Number Blocks	Number of Rooms	Number of beds	Envisioned number of beds
Prevailing situation in existing facility	25 (each four rooms)	100 (each 2 beds)	200	--
Proposed situation in the existing facility	*21 (each four rooms)	84 (each 2 beds)	168	168
Proposed presidential suites	Single unit category	13 (each 2 beds)	26	26
	Luxury suites	3 (each 2 beds)	6	6
	Double suites	2 (each 4 beds)	8	8
--	--	--	--	208-2010

Other components at the lodge both existing and the proposed ones will be the main house including a swimming pool and associated amenities, which have been demolished and will be reconstructed; the main house, swimming pool and associated recreation facility within the new wing for the proposed presidential suites; the existing lodge staff and tour driver guides village; workshop, two boreholes; three generators and power houses and six underground water reservoirs with capacity to reserve total 180,000 litres and facilities for management of both solid and liquid waste. The site layout plan that includes the existing, under renovation, demolished and the proposed new presidential suites at Ngorongoro Sopa Lodge is shown in Figure 1.1.

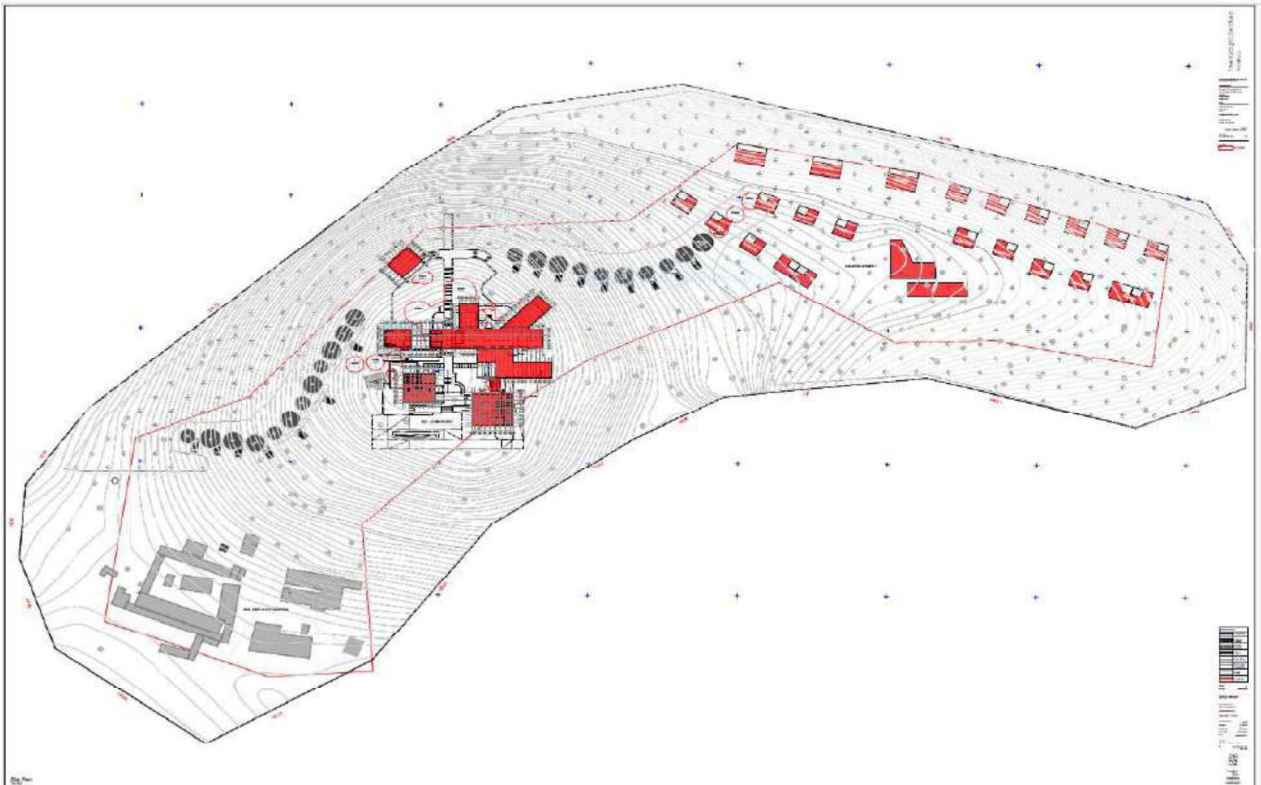


Figure 1. 1: Site layout plan of the existing, under renovation, demolished and the proposed new presidential suites at Ngorongoro Sopa Lodge

1.2. Justification of the Proposed Project

Prospects for growth of the tourism sector in Tanzania are high as indicated by an increase in the number of international tourist arrivals over a period of five years from 1,137,182 in 2015 to around 1,527,000 in 2019 before Covid-19 pandemic (Tanzania Investment com, 2020), which accounted for an average of approximately 7.0% growth rate per year. The growth is further demonstrated by an increase in tourist arrivals from 922,692 post covid-19 pandemic in 2021 to 1,808,205 in 2023 (BoT, 2024) accounting for an average of 48% per year over a period of two years.

Similarly, visitors both international and domestic who visited the NCA increased from 567,983 in 2015/2016 to 707,710 in 2019/2020 (Table 1.1) before Covid-19 pandemic; an average growth rate of approximately 5.0% per year. The lockdowns and travel restrictions that resulted from the deadly disease caused the number of visitors to the NCA to decrease to 191,614 in 2020/2021 before it picked up to 425,386 in 2021/2022 (Table 1.2) following the lifting of travelling restrictions. The number increased further to 752,215 in 2022/2023 surpassing the level that was recorded in 2019/2020 before Covid-19 (Table 1.1). In the financial year 2023/2024, visitation to the NCA increased further to 908,627 visitors (Table 1.1).

Table1. 2: Trends in tourist numbers to NCAA between 2015/2016 and 2022/2023

Financial Year	International Visitors	Domestic Visitors	Total
2015/2016	289,061	278,922	567,983
2016/2017	352,991	248,224	601,215
2017/2018	372,732	271,423	644,155
2018/2019	430,616	270,094	700,710
2019/2020	412,244	294,807	707,710
2020/2021	72,632	118,982	191,614
2021/2022	228,810	196,576	425,386
2022/2023	458,345	293,874	752,215
2023/2024	553,875	354,752	908,627

Source: NCAA unpublished reports, 2024

1.3. Project investment costs and Project life span

Total investment cost for renovation of the existing structure mainly the guest rooms, staff village and tourist driver guides; reconstruction public area at the developed wing, the proposed new presidential suites and public facilities at the proposed presidential wing is estimated to be 47,300,000,000. The life span of the project is 50 to 60 years if regular maintenance will be conducted on regular basis.

Despite the encouraging growth in the number of visitors to the NCA, deficit in the number of guest beds has persevered such that during high tourist season the high-end accommodation facilities, which are mainly provided in lodges and permanent tented camps are overbooked. Whereas majority of the potential visitors are interested to spend their nights in the NCA where wildlife and the wilderness, which motivate them to visit the area are found, some of them are partly forced to stay outside the Conservation Area, which increases travelling fatigue or take up the less comfortable accommodation facilities in the campsite contrary to their preference. Projections indicate that the NCA will receive at least 900,000 visitors in 2025/2026 (that was surpassed in 2023/2024) (Table 1.1) and the period of stay will increase from an average of two to three days per visitor thus, require maximum 2,700 beds in the high-comfort accommodation facilities if all guests were to spent three (3) days in the area.

Nonetheless, a survey that was conducted in 2020 revealed that only 858 beds were available in the NCA in the lodge and permanent tented camps accommodation categories. The fact that there will be more visitors to the NCA in response to among other marketing strategies; the historical tourism documentaries; “the Royal Tour” and “the Amazing Tanzania”, which Her Excellence Dr. Samia Suluhu Hassan; the President of the United of Tanzania and His Excellence Dr. Hussein Mwinyi; the President of the Revolutionary Government of Zanzibar participated in 2022 and 2024 respectively, the need for increasing visitor beds in high-end accommodation facilities is undisputable.

In addition to the main three functions of the NCAA, which are, to conserve the natural resources, safeguard the interests of resident pastoralists and to promote tourism, the Authority is also responsible for attracting guests to visit the NCA and ensure their maximum enjoyment and

satisfaction without compromising the very values that appeal them. This obligation is realized through putting in place necessary infrastructure and identify areas that are potential to supporting additional, upgrading the existing facilities from the lower categories, and/or expansion of those already in the higher class to provide more beds.

Despite the fact that the Ngorongoro Sopa Lodge was established in 1992 before the NCA-General Management Plan (GMP) that designated the Northern Highland Forest Reserve (NHFR) as core conservation zone (Figure 1.2) was prepared and approved for implementation in 1996, over 32 years of its existence, it has earned several respects for its long-standing appreciation of environmental conservation at the respective site in particular and the NCA in general. This is evidenced by the owner of the facility; the Consolidated Tourist and Hotels Investment Limited to commission an Initial Environmental Audit (IEA) in 2015 to comply with the EMA, Cap. 191, which directs that all developments that were in operation when the Act was enacted in 2004 should be subjected an environmental audit (EA).

Since the renovation of the existing facilities and the addition of new presidential rooms will bridge a gap in the high-end visitor beds that is currently existing in the NCA, contribute to the government’s effort towards poverty reduction particularly by creating employment opportunities, its operation over 32 years ago has proved to be relatively environmentally friendly such that the land where it located has remained resilient and it fits well in the Government and NCAA’s economic plans, its justification should not be debateable.

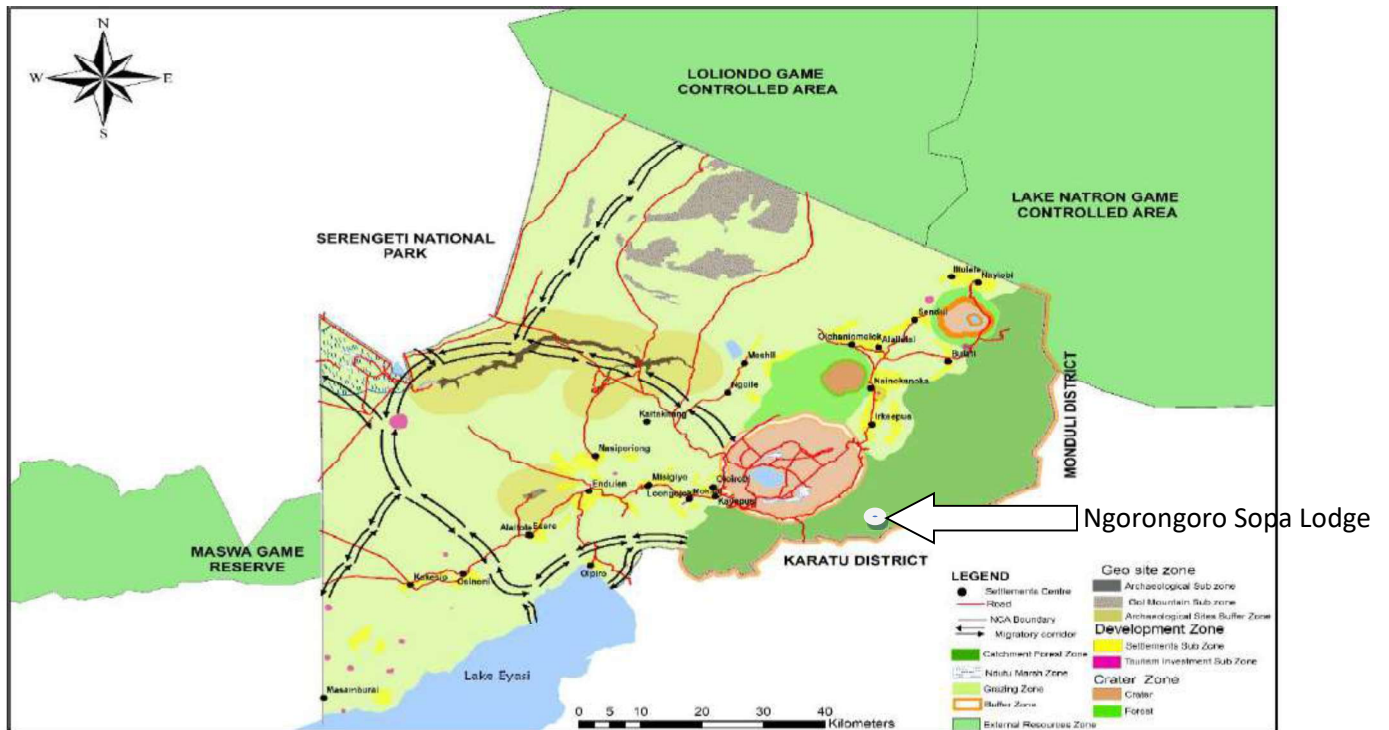


Figure 1. 2: The location of the Ngorongoro Sopa Lodge in relation to the NCA management zones (Source: NCA-Zone Management Plan (2021-2026))

1.4. Company Profile

Summary of the profile of the Consolidated Tourist and Hotels Investment Limited is presented in Table 1.2.

Table1. 3: The summary of the investors' profile

Name of the Company	Consolidate Tourist and Hotels Investment Limited
Contact Address	P.O Box 1823, Arusha; Telephone: +255 0765 007 272 or; Email: salim.ferouz@elewana.co.tz
Contact Person and Telephone Number	Salim Ferouz; Telephone: +255 0782 007 272
Company' Head Office	Arusha City Council
Certificate of Incorporation Number	14992 of 23 rd March, 1988 (Appendix 3)
Taxpayers Identification Number (TIN)	Number 100-169-487 of July 26 th , 2013 (Appendix 4)
Value-Added Tax Certificate	Number 11-006046P
Sector	Hospitality
Sub-sector	Accommodation Facilities
Overall Objective of the Company	To carry on the business of Campsites, Tented Camps, Lodges, Hotels, Restaurants, Cafes, Roadhouses, Motel Safaris, Holiday Camp Keepers, Tour Operator and Organiser as well as Tour Agent
Total Investment Cost	Tanzania Shillings (TZS) 47,300,000,000
Project Administration	Board of Directors for giving guidance and Management Team for day-to-day supervision.

The Consolidated Tourist and Hotels Investment Limited owns eight lodges all of them blessed with the Sopa name; five of them in Kenya and three in Tanzania and all are located within the world's most beautiful National Parks and Wildlife Conservation Areas, which teem with countless species of birds and truly wild animals. The facilities are individually designed to blend with the superb equatorial landscapes and depict the Africa cultures and the traditions of the local inhabitants who contribute to the rich cultures, which Kenya and Tanzania boast of. The Sopa lodges are located in Lake Nakuru, Amboseli, Lake Naivasha and Samburu national parks as well as Masai-Mara National Reserve in Kenya; and Tarangire and Serengeti national parks, and in the Ngorongoro Conservation Area in Tanzania (Figure 1.3).

The location of every facility at all the properties, which the Consolidated Tourist and Hotels Investment Limited operate has been carefully chosen to offer the best views over the wilderness while also presenting an unsurpassed environment amongst cool and elegant surroundings. The magnificent standard services provided at all facilities operated by the Consolidated Tourist and Hotels Investment Limited are a result of over thirty years of experience in the hospitality industry, which is accorded by the staff who are carefully selected for their dedication to personal

service and a genuine, heartfelt friendliness. This ensures supreme enjoyment and satisfaction of the guests.



Figure 1. 3: Location of Sopa Lodges operated by the Consolidated Tourist and Hotels Investment Limited in Kenya and Tanzania

Even though most of the Sopa properties are literally in the middle of the Africa's vast wilderness, they are provided with as many facilities and amenities as possible for the visitors' comfort. The additional event provided for the discerning clientele at the Ngorongoro Sopa Lodge include but are not limited to, baby-sitting, bedroom kettles, bedroom minibar, which is stocked on request, bedroom television but in suites only, board games, children's menu, children's pool, hairdryer, physically-challenged rooms, honeymoon suites, outdoor dining, traditional dances, wedding facilities.

While the Consolidated Tourist and Hotels Investment Limited possesses a license to carry on the business of accommodation facility (Appendix 6), the objects provided in the Company's Memorandum of Association for which the Consolidated Tourist and Hotels investment Limited were established are broad. Those related to the current project include to:

- (a) Undertake the business of hotel operations, tented Lodges, balloon safaris and lodges;
- (b) Engage in the business of restaurants, cafe, inns, motels, coffee houses, tea rooms, refreshment rooms, special galleries and boutique;
- (c) Carry on the business of reservation and bookings, agents, representatives of hotels, lodges, holiday inns, Lodge sites, motels, cottages, summer houses, airport hotels and agents, representative, partnership, joint venture, franchisers with other international or local hotels, lodges, holiday inns, motels cafe restaurants;
- (d) Assist in the promotion of tourist industry in Tanzania and elsewhere and to carry on the business of travel and tourist agents and contractor's and to facilitate travelling and to provide

for travellers and tourists or promote the provision of conveniences of all kinds in the way of, and through tickets, sleeping cars and berths, reserved places, guides, safe deposits enquiry, information and currency exchange, bureau, libraries, reading rooms, lavatories, baggage, transport and otherwise;

- (e) Advise, assist and represent travellers and tourists, prospective travellers, tourists and others in connection with passports, visas and other travel documents; health and medical requirements and certificates and any other matters or things connected directly or indirectly with travel and recreation;
- (f) Act as booking, ticket and general agents for, and representatives of other travel and tourist agents, airlines, motor bus or local operators and other carriers whether public or private and other undertakings catering for public or private entertainment or amusement, holiday Lodges and organizers of safari expeditions and excursion for hunting, climbing, sightseeing, photography or any other purpose;
- (g) Promote tourism in Tanzania and elsewhere in Africa, to carry on the business of travel and tourist agents and tour operators, to promote and facilitate travelling to organize hunting, tented Lodges, fishing and diving expeditions, safari promoters and undertakers, generally to arrange and manage hunting safaris, adventure tours, fishing trips, handling of game trophies and animal skins, catching, harbouring, transporting wildlife and marine products of all kinds;
- (h) Purchase, acquire, undertake or takeover the whole or any part of business, profession, goodwill, property, contracts, agreements, rights, privileges, effects and liabilities of any person, firm or company, carrying on similar objects and upon such terms and subject to such price or consideration (if any) in shares, debentures, moneys, worth or otherwise;
- (i) Enter into any arrangements with any Government or authorities that may seem conducive to the attainment of the Company's objects or any rights, privileges, license and concessions, which the Company may consider convenient and use or comply with any such arrangements, rights, privileges or concessions;
- (j) Open the branches all over the country in conjunction with the objects of the Company;
- (k) Carry out in any part of the world all, or any of the objects as principals, agents, factors, trustees, contractors or otherwise, either alone or in conjunction with any other person, individual, firms, association, body corporate, municipality, government or semi-government authority; and,
- (l) Carry on any business, which the Company is authorized to carry on, or which is ancillary to the carrying on the business of the Company.

1.5. Requirement for the Conduction of an Environmental Impact Assessment

It is compulsory to subject all development projects, which are listed in the "Third Schedule" of the EMA, Cap. 191 and in the "First Schedule" of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the "Principal Regulations" that is, EIA and Audit Regulations, 2005. Those, which are related to the current project include all tourism and recreational facilities to be developed in protected areas including national parks, marine parks, forest reserves and the NCA; adjacent areas; and islands and surrounding waters.

Similarly, the NCA Private Concession Policy, Strategy and Procedures (2019-2024) sets a clear vision that the NCA's environmental, cultural and landscape qualities constitute its greatest resource for the future with regards to its economic development and quality of the life of the area's residents. This Policy recognizes further that the environmental aspect does not address only the rich gifted resources, which should be preserved for the future, but it is also an extraordinary driving force for the local people's economic, social and cultural development. In view of this recognition, the Policy acknowledges that, the EIA findings will provide sufficient information including full understanding of potential impacts, both positive and negative of any envisioned development project or action in the NCA for making informed decisions.

Whereas the EIA process is controlled and regulated by the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the "Principal Regulations; the EIA and Audit Regulations, 2005, the NCA Private Concession Policy, Strategy and Procedures (2019-2024) highlights on issues to be considered when conducting the EIA and provides a step-by-step procedure for seeking approval to develop facilities or conduct activities within NCA.

Further, the NCAA letter with reference number BE.176/341/11/39 of 25th May, 2024, which responded to a request that was presented by the Consolidated Tourist and Hotels Investment Limited to clear undeveloped area for the purpose of constructing new residential suites required the investor to conduct an EIA in accordance to the EMA, Cap. 191 before the approval could be considered (Appendix 2). To comply with EMA Cap. 191 and associated Regulations and the NCA Private Concession Policy, Strategy and Procedures (2019-2024), the investor commissioned this EIA study to adhere to legal requirements and the NCAA directive.

The current EIA study was conducted by Dr. Victor Runyoro; an Ecological Economist and Mr. Gerald Gisiput; an Environmentalist of P.O Box 15070 Arusha, Tanzania. Both are Registered and Practicing environmental experts and this complies with the Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021. Section 83 of the EMA, Cap. 191 directs that the EIA and the EA shall be conducted by Experts or Firms of Experts whose names and qualifications have been registered as such by the Council. Further, Regulation 24(3) provides that a certified environmental expert shall provide professional expertise only in the area indicated in his practicing certificate. The two Registered and Practicing experts are allowed to conduct the EIA in the fields of wildlife and tourism.

1.6. Objectives of Conducting this EIA

The main objective of conducting this EIA is to ensure that development activities throughout the life cycle of the facility, which is undergoing intensive renovation and establishment of new structures within the leased land to the Sopa Lodge in the NCA, will be carried out in a manner that is environmentally friendly, socially acceptable and economically viable. The specific objectives of this EIA study are:

- (i) To determine how will the project activities and processes conform to environmental management practices and environmental quality standards;
- (ii) To provide a mechanism to learn from experience, and to re-design and implement procedures of the project in a manner that mitigates adverse environmental impacts;

- (iii) To improve the project activities so as to comply with the environmental legislation and regulations such as air emission, discharge of effluent, waste management and operating standards;
- (iv) To predict the impacts that may be caused by the project activities and suggest possible mitigation measures prior to commencing implementation, including emergency preparedness and response, monitoring and reporting system and planning for future environmental performance;
- (v) To prevent damage and tendency for environmental damage and use the predicted impacts and the EIA recommendations as the basis for the development of environmental and social mitigation and monitoring plans;
- (vi) To improve resource utilization through reduction in material use, minimize waste and deploy available recycling opportunities; and,
- (vii) To suggest actions needing to be undertaken by the proponent to meet environmental goals such as sustainable development, recycling and efficient use of resources.

Ultimately, an EIS will prepare and provide baseline information upon which environmental control audit studies shall be based, and the environmental and social management and monitoring plans shall be developed to advise on how adverse impacts will be avoided, eliminated or reduced and beneficial outcomes enhanced.

1.7. Scope of Work

During the conduction of this EIA study, environmental experts ensured that an appraisal of all the project activities was carried out. Policies, laws and administrative frameworks related to environmental preservation, human health and safety and sustainable use of natural resources were given adequate consideration. The assessment helped to prepare an environmental and social mitigation plan (ESMP) and an environmental and social monitoring plan (EMP). The scope of the work for the current EIA study is detailed in the approved Terms of Reference by the National Environment Management Council (NEMC) (Appendix 10).

1.8. Methodology

The methodology that was adopted to conduct this EIA study conformed to the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the Principal Regulations; the Environmental Impact Assessment and Audit Regulations, 2005. Contents and format of the report are presented in accordance with the Fourth Schedule of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 made under Regulation 15.

The study was carried out based on an EIA checklist provided in the NCAA Private Concession, Policy, Strategy and Procedures (2019-2024) and the Guidance and Toolkit for the Impact Assessments in a World Heritage Context (UNESCO, ICCROM, ICOMOS and IUCN, 2022), which were complimented by the past experience of environmental experts in undertaking similar studies. Environmental experts assessed the biophysical and ecological features at the proposed project site and surrounding habitats in the company of representatives of the investor who are based at the respective site.

1.8.1. Discussion with the Proponent and review of baseline Information

Environmental experts held discussion with the Proponent before the site, which was done in June 11th, 2024. The purpose of the discussion with the Proponent was to determine his understanding with respect to relevant policies and laws particularly those related to the preservation of the environment; social and economic conditions; tourism; and occupational safety and health. The Proponent's expectations, level of awareness and readiness to comply with relevant national policies and laws during the implementation of the project were ascertained through this discussion. The EIA logistics and agreement on the assessment plan were also accomplished during the discussion.

The discussion with the Proponent revealed that his level of awareness and compliance to relevant policies and laws with respect to the proposed project was high. The understanding of the Proponent was a result of his experience of 32 years of operating the Ngorongoro Sopa Lodge and reading relevant guidelines, which were provided by the NCAA and particularly the NCAA Private Concession, Policy, Strategy and Procedures (2019-2024). Discussion with representatives of the Proponent at the site revolved mainly around the layout plan of the proposed facelift of the facility; the proposed construction of the proposed presidential suite and associated components; the availability and sustainability of water supply; and the plan adopted the water recycling technology, which will among other merits will reduce utilization of the resource from the environment.

1.8.2. Literature review

After ascertaining the Proponent's knowledge on the procedure for investing in the NCA, relevant documents were reviewed to gather baseline information with regard to environment, social and economic conditions of the project. Among relevant documents that were reviewed include the national policies and laws as well as the international conventions, protocols and agreements. The NCAA guiding documents especially the NCAA-Management Zone Plan (MZP) (2021-2026), the draft NCA-GMP (2018-2028), the NCAA Private Concession, Policy, Strategy and Procedures (2019-2024), the NCAA-SCP (2021-2026) and the final report on the Multiple Land Use Model of Ngorongoro Conservation Area: Achievements and Lessons Learnt, Challenges and Options for the Future of 2020 were reviewed. Because the NCA is one of the United Nations Environment, Science and Cultural Organization's (UNESCO's) World Heritage Sites, the Guidance and Toolkit for Impact Assessment in a World Heritage Context (UNESCO, ICCROM, ICOMOS and IUCN (2022) was also reviewed.

1.8.3. Site visit

Environmental experts accompanied by and representatives of the Proponent visited the site in June 11th, 2024 where important issues with regard to the site were discussed and existing condition, and potential impacts of the undertaking were identified (Figure 1.4). Consultation with representatives of the Proponent at the site helped to gather information on the potentiality, characteristic, magnitude and distribution of impacts as well as duration of the project's impacts and the groups of people who might be affected by the project either positively or negatively.

1.8.4. Stakeholders' consultation

In addition to the site visit and discussion with representatives of the Proponent at the site, more relevant stakeholders (Appendix 9) were unfolded and consulted as the assessment proceeded.

These included the Ngorongoro District Council, the Internal Drainage Basin Water Board, the Fire and Rescue Force, the Occupational Safety and Health Authority (OSHA), the Tanzania Meteorology Authority (TMA) and the National Commission for UNESCO. Stakeholders' consultation aimed at complying with Section 89 of the EMA Cap. 191, which provides directives on public participation issues and its importance to the EIA study. Regulation 17(1) of the EIA and Audit Regulations, 2005 read together with the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 provides detailed procedures for stakeholders' participation in the EIA process. All stakeholders' views and concerns that were gathered (see Chapter 5) provided input to the preparation of an EIS.

To intensify stakeholders' consultation, the Scoping Report and the Terms of Reference (ToR) (Appendix 7) of the EIA study were submitted to the Ngorongoro District Council, the NCAA, the Tanzania Wildlife Research Institute (TAWIRI) and the UNESCO National Commission to seek comments with respect to the proposed project and the report itself. According to Regulations 10(1) and (4) of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018, a proponent is required to submit copies of the Scoping Report to relevant authorities and submit evidence of the service to the Council. Only the Ngorongoro District Council and the National Commission for UNESCO commented on the scoping report and the ToR (Appendix 10).

Subsequently, NEMC approved the ToR for conducting the EIA through letter of July 30th, 2024 with reference number HF 145/193/54/02 which advised environmental experts to proceed to the conduction of the full EIA. The project was issued the Project Registration Number EC/EIA/2024/3570 that falls under type "A" projects (Appendix 10).

1.8.5. Identification of significant impacts

Impact identification ensured that all existing and potentially significant effects were recognized and considered using various and available tools based on an impact assessment checklist provided in the NCAA Private Concession, Policy, Strategy and Procedures (2019-2024).

1.8.6. Development of environmental and social mitigation and monitoring plans

Both an ESMP and an EMP were developed using information that was collected during both scoping and full EIA study. The full EIA study investigated all issues that needed close attention, which are included in the ESMP and the EMP for remedial measures of the negative outcomes and enhancement actions for the positive ones. These include:

- (i) Potential for destruction of the outstanding universal values (OUVs) and the ecological sensitive areas through pollution to the soil, air and water on site and neighbouring areas;
- (ii) Potential in the increase of runoff due to loss of vegetation cover and the resulting soil erosion;
- (iii) The consequences of water overutilization to the area and surrounding environment;
- (iv) Effect of noise, vibration, dust and gas emissions to the people, the local biodiversity and the ultimate health problems and ecological disorder;
- (v) Effects of cumulative and residual impacts on the environment from solid and liquid waste as well as water overutilization;

- (vi) Emergency preparedness, practices and the role of staff in disaster response and management;
- (vii) Reduction of poverty levels among the communities in the Ngorongoro District and neighbouring villages in Karatu District through employment and other income generating opportunities; and,
- (viii) Revenue generation to the local and the central governments as well as the NCAA through fee, levy and tax payments by the Proponent.

1.9. Report Structure

The report is divided into twelve chapters conforming to the requirement of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the “Principal Regulations”; Environmental Impact Assessment and Audit Regulations, 2005. Chapter one consists of the introduction, Chapter two provides the project description, Chapter three reviews the policy, legal and administrative frameworks and Chapter four describes baseline or existing condition.

Chapter five describes stakeholders’ concerns and opinions, and response of the Proponent. Chapter six provides the impacts that were assessed and identifies impacts’ boundaries as well as project alternatives. Chapter seven proposes impact management or environmental mitigation measures. Chapters eight and nine present impacts mitigation and monitoring plans respectively. Chapter ten evaluates resources or the cost-benefit analysis of the project, Chapter eleven presents a decommissioning plan, and Chapter twelve summarizes and concludes the report. References are followed by appendices at the end of the EIS.

CHAPTER TWO

2.0. DESCRIPTION OF THE PROPOSED PROJECT

Under the proposed Lodge upgrading, main house will be upgraded into a new, modern structure consisted of a reception; a centrally well-lit lobby; business center with internet services; a curio shop, which sold a wide variety of souvenirs ranging from fabrics, guidebooks, to wooden carvings; a multi-functional spaced conference room with a sizeable balcony where private dinners or drinks were served; short staircase that led to a small sunken lounge, with the entrance to the dining room on one side, and the lounge/bar on the other. Also, guests' rooms, staff quarters will be upgraded to meet the current demands of the tourism industry. While the the restaurant had the capacity to accommodate up to 180 guests at one particular time, the bar could house up to 50 people. Both the restaurant and a bar provided good view of the Ngorongoro crater through the glass windows. Linked to the front view components was a kitchen that contained relevant amenities including the cold room; the Chef's office; a number of stores for keeping assorted items such as foodstuffs, beverage, sanitary equipment and cutlery; and toilets for the kitchen staff.

While the original shape of the main house so as many components of the facility will be maintained, the envisioned modifications aim at coping with the current clients' taste and preferences and changing technology particularly that, which save resources' utilization like water and energy, smoothen operations, improve health and safety of both the visitors and employees and protect the integrity of the environment. The reconstructed main house will therefore consist of a reception with luggage room and a place for keeping towels and welcoming juice; wine-gin bar that will be annexed to a lounge with an excellent view of the Ngorongoro crater; children's playing room; a restaurant; separate public toilets for both males and females; administrative offices; board room; and a gift shop. The restaurant and a bar will retain their capacity of holding 180 and 50 people at one particular time.

Part of the main house will be a kitchen to be provided with common toilets for kitchen staffs; chef's office; different stores to keep kitchen utensils, sanitary tools as well foodstuffs and beverages and cold rooms. At the interface between the dining place and the kitchen there will be an area where food will be served from, and a dispense bar. At the rear of the kitchen and cold rooms there will be an open to sky service yard. Total land area to be covered by the main and associated facilities including open spaces and service corridors will be approximately 3,000m².

The main house will be erected on the concrete foundation, floored with screed cement and the viewing deck at the rear of the house will be raised at most one metre above the ground on concrete footings. Whereas raising structures above the ground will minimize the use of concrete and soil excavations on the site, it will also provide respectable view of the Ngorongoro crater and allow free movement of medium-sized animals underneath. The roof of the main house will of the dark-brown colour slate material that will blend with the natural environment. This type of roofing material lasts longer, which can be more than 100 years. The material never burns, is waterproof and resists mould and fungus and therefore effective in wet weather, which is characteristic to the Ngorongoro highlands where the Ngorongoro Sopa Lodge is located.

Dropping point will be in-front of the main house where guests will be received with welcoming juice and registration before are escorted to their rooms using the walkways. The road entering into the Lodge will be is designed in such a way that impact on view shed is avoided. Walkways for circulation within the lodge components and a track to access the staff village and the tourist driver guide's centre will be well-designed comply with the environmental preservation requirements. Typical guest that will be upgraded is as shown in Figure 2.1.



Figure 2. 1: The existing Lodge structures which shall be upgraded. Source: Fild work 2024

2.1.1. New guest rooms at the proposed presidential wing

The design for proposed presidential suites will not have a multi-stored structures like the existing building but it will only have a beneath basement floor which will accommodate sauna and gym, WCs and pool lounge while the first floor will have bedroom, lounge, bath, WCs, and viewing balcony.

The existing wing located within a 10.1-acre piece of land will accommodate 21 guest blocks with total capacity of 168 beds (see subsection 2.1.1). The remaining 52 guest beds to realize a target of 210-220 at Sopa Lodge as advised by the NCAA commensurate to the Lease Agreement (Appendix 1) will be contained in 13 standard units (26 beds) and six (6) beds in three (3) luxury suites and 8 beds in two double suites (Figure 16). that will be constructed in a currently undeveloped 3.04-acre piece of land.

The standard rooms will be provided with double-beds, side tables, a coffee table and safari chairs made from local materials, a closet and a reading table with two arm chairs. At the rear of each room there will be a shower to supply hot water from a 300-litre solar-powered heater, a washing basin and a flush toilet. Each room in this category will contain a plunge pool that will be located on the rear overlooking the breath-taking view of the forest. The luxury suite will have a basement floor where a swimming pool will be located with entertainment facilities including a bar, lounge, toilets and wash basin for males and females, gym and sauna. The ground floor for each of the luxury suites will have an entrance area; common balcony that will be furnished with safaris chairs, sofa set and coffee tables; lounge with public toilets; two bedrooms each with own lavatory, bathroom, balcony and a dresser; and a meeting room to accommodate about 10 people (Appendix 16). Hot water for each of the luxury suites will be supplied from 1,000-liter solar-powered heater.

The walls of all new guest blocks will be constructed with cement blocks and the top will be roofed with slate material, which is effective in all environmental conditions, long-life and its quality varies widely. Concrete stairs into the room will be provided entrance and paralleled by the ramps to carter for the physically-challenged persons. The floor will be finished with hard-wood. All rooms will be positioned to suit a view of natural features down the valley and oriented to afford maximum privacy and extensive private views of the surrounding environment.

At least two rooms in the standard category will be fully furnished and equipped to accommodate the physically-challenged persons especially low beds and wet room. Other facilities such as restaurants, lounge, washrooms shall be provided with facilities particularly the ramps and wider doors that will be convenient for the use by the disabled people. Guest rooms will be accessed from the main house and all common areas by ground-level pathways and also designed to allow the use of wheel chairs. All pathways will be set in a way that they offer appropriate visibility of immediate surroundings in order to avoid potentially dangerous animals, while respecting the visual opportunities and privacy of each accommodation unit.

2.1.2 New main house at the proposed presidential wing

The size of the new main house at the proposed presidential wing building will be approximately 1,000m². It will consist of a car porch, which will be located between the guest dropping point and the entrance. Components of the new main house will be a reception; lounge; luggage scanning room, visitors' concierge room, terraces; public toilets; administrative offices; gift shop;

business centre; kids' playing room; and forgotten luggage room. It will also contain a conference and social gathering hall; a room for indoor games; pantry; administrative offices and a coffee shop. Between the visitor's lounge and the kitchen there will be a restaurant, bar and a Barbeque (BBQ) area with the restaurant and a bar having the capacity to accommodate 50 people independently at one particular time. At the rear but annexed to the new main house there will be a kitchen that will be provided with staff toilets for ladies and gents, cold rooms, chef's office and different stores to keep kitchen utensils, crockery, sanitary tools, foodstuffs and beverages.

The terraces for the new main house will as for existing one, be erected at most one metre above the ground on concrete footings. Inside the new main house, the floor will be finished with porcelain tiles on top of concrete cement. Similar to the main house that will be reconstructed, the new main house will be roofed with dark-brown colour slate material on top of rafters and paring that will be supported by treated timber pillars, fitted in friction stone piles. The walls of the new main house will be constructed with cement blocks, plastered with screed cement and painted with appropriate colour preferably the beige that will blend with the surrounding environment.



Figure 2. 2: Proposed area for the establishment presidential suites: Source: Filed work on 2024

2.1.2. Staff accommodation facilities

Before it was close down the Ngorongoro Sopa Lodge employed 165 permanent staff, who comprised of eight senior personnel including one (1) Lodge Manager, two (2) Assistant Lodge Managers, one (1) Lodge accountant, one (1) chief Chef, one (1) Assistant chief Chef, one (1) Head of housekeeping and one (1) Maintenance Manager. The junior staff village that consists four (4) blocks each with 10 sleeping rooms and every room is designed to accommodate four people with shared ablution. While three (3) blocks accommodate approximately 120 male staff,

the remaining one is apportioned to house maximum 40 junior female employees. Both the male and female employees share recreation facilities including a kitchen, restaurant, a bar and a shop all of the are located within the staff village. A bar is provided with indoor games including table tennis and dart board as well as a television (TV).

A staff kitchen is equipped with a fridge and a freezer, stove and oven, cupboard with all necessary cooking equipment, and a store for keeping crockery and cutlery. Food is free for staff and filtered clean and safe drinking water is provided from a filter, which is kept in a restaurant. Building materials for the staff village is mainly permanent with walls constructed with cement blocks on concrete foundations, roofed with corrugated iron sheets and topped with thatch grass to blend with the environment.

Rooms for the senior staff are located within the guest room's premises to allow them attend to emergencies. Since the number of the Lodge staff will be increased from 165 who were employed before the closure of the facility to 180 after commissioning the facelifted property, one more block with five (5) rooms, each room designed to accommodate four (4) persons will be construction within the staff village to accommodate maximum 20 people. All other existing facilities in the staff village will also be renovated to improve the standard of residence.

2.1.3. Swimming Pools

There will be two swimming pools that will be constructed at the project site. The first one will be within the initial land while the second common swimming pool will be located within a 3.4-acre currently undeveloped piece of land where the construction of new proposed presidential rooms will take place. The pool will consist of more or less similar amenities with those to be provided in the one that will be renovated but because it will serve few very important people, they will be lesser in number and smaller in dimensions but superlative. These will include but limited to the side bar; changing rooms and toilets for both gents and ladies; health resort, viewing decks and a number of campfire spots, perfect for stargazing.

The depths of both swimming pools will rise between 1meter to 2 meters at shallow and deep ends respectively. The walls and floor of the swimming pools will be finished with ceramic and porcelain tiles respectively, and each of them will consist of a pump house of the size 2.5x2.5x5m and a balancing tank of 1.5x2.5x1.5m capacities. Awareness to swimmers on hazards and risks at the facility will be made through display notices at the reception, in changing rooms and on pool sides. While floors, stairs, internal walls and the whole premises at the pool shall always be kept clean, dustbins for waste disposal shall be provided and emptied every night. Both swimming pools will be surrounded by irrigated and well-trimmed lush green grass and provided with wooden sunbeds to sun-burst when the weather is chilly.

Whereas the three luxury rooms to be constructed in the proposed new presidential wing will consist of a swimming and its associated facilities at the basement, each of the proposed new 10 standard category rooms will consist of a 200cm x180cm x56cm plunge pool at the backyard for lounging and cooling off. The plunge pools will also double a hot tub in the cold weather and a cool-down in hot condition.

2.2. The architectural design

Architectural design particularly scattering the Lodge components into separate clusters has taken care of limiting disruption of the natural scenery and minimize disturbance to the natural environment. Most important will be restraining brightness of outdoor lights. Key to the success of the architecture of this facility will be the careful integration and identification of qualities and constraints of the site in order to extract and maximize available qualities, while minimally impacting on its resources. The location of the new site for sinking borehole is outside the 16.2-acre land, which is leased to the Proponent. Thus, an access track to the facility shall be developed carefully in cooperation with the NCAA to avoid soil trampling and developing many access walkways. The natural beauty of the landscape as well as privacy and calmness of the environment to inhabitants has therefore been the priority in preparing the architectural drawings.

2.3. Project Utilities

2.3.1. Water supply

For quite a long time since the Lodge commenced its operation in 1992 availability of enough water has been an enduring problem. In its early years of its operation, the Lemala (Oljoronyuki) River was impounded for accumulation of water for the Lodge use. Nonetheless, this raised conflicts with other users particularly the people from the neighboring Irkeepus village who claimed to have been denied their long-standing sources of livestock watering. In compensation, the Lodge built a dispensary at the village center. Overuse of the River reduced flow of water into the Ngorongoro crater where in some years during the dry period it dried up.

The situation obliged the Lodge to drill a borehole with the NHFR. When an Environmental Audit for the Lodge was conducted in 2015 the borehole was not functioning and it was reported that its yield was low, increasingly becoming costly and got almost dry during dry season. Drying up of the borehole forced the Lodge to draw water from the Lemala River or as far as up to 35 kilometers from the old NCAA headquarter. When an environmental audit of the Lodge was conducted in 2015, it was established that depending on operations, between 60,000 and 100,000 liters of water were abstracted from the Lemala River.

During dry season about 140,000 liters were brought by the bowser daily to the lodge from the old Ngorongoro headquarters. The scarcity and overutilization were compounded by having bathroom with high flow shower heads, having water getting hot after taking relatively a while depending on the room location from the centralized boiler and cold water in the showers was allowed to run out until hot water was detected. The toilet water shank consumed almost 10 liters per single flush which was on the higher side. The problem for sustainable availability and reliability of water supply for the operation of the Sopa Lodge prompted the Management to commission MMJ Drilling and Consultancy Limited to conduct the hydrogeological and geophysical survey in December, 2023.

The surveyors recommended that a water abstraction permit should be sought from the Internal Drainage Basin Water Board before commencing any borehole drilling works to comply with section 54 of the Water Resources Management Act Cap. 331 and Regulation 20 (1) of

Groundwater (Exploration and Drilling) Licensing Regulations, 2013 (Appendix 8). Notwithstanding the promising results from the respective survey, during the environmental experts' visit at the Sopa Lodge in June 11th, 2024. Water for construction was drawn from the Lemala River using a bowser meaning that about six(6) months after the hydrological and geophysical survey was conducted, the borehole was not drilled for use yet.

Internal distribution from the storage tanks has been accomplished, and will continue to be the one that applies a pressurized system through black synthetic pipes, which is estimated to cover (4) kilometres. The pipes will be laid and covered at least half a metre under the ground. After drilling a borehole, water samples will be collected for quality analysis including chemical, physical and bacteriology to determine their conformity with the Environmental Management (Water Quality Standards) Regulations, 2007. Further to that, drilling exercise will be supervised by a hydro-geologist who will clearly monitor the in-situ cuttings, the drilling penetration rates, water strikes and water quality changes.

The initial results of the hydrogeological and geologically survey determined that water is slightly salty, which has been a situation for the existing malfunctioning borehole and therefore treatment to reduce fluoride may not be needed if established to be within the allowable limits according to the Tanzania Bureau of standards.

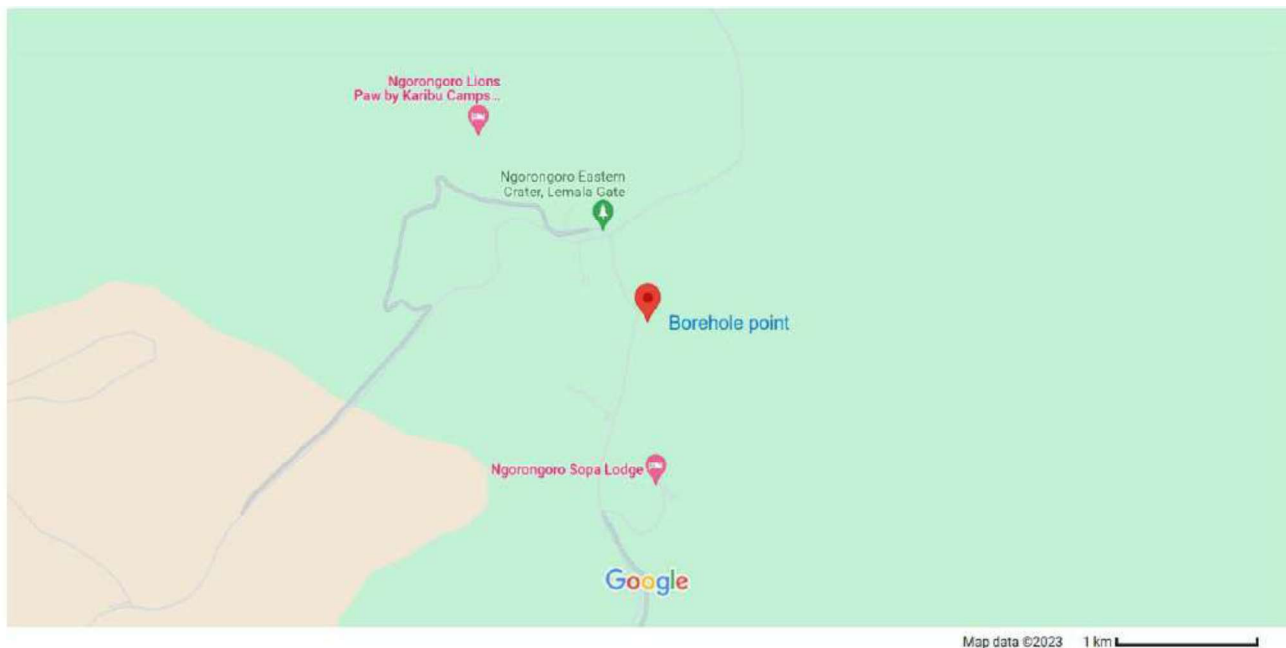


Figure 2. 3: Location of a point recommended for the borehole drilling in relation to closer tourist facilities in the NCA (Source: MMJ Drilling and Consultancy Limited Hydrogeological and Geophysical Survey Report, December, 2023)

2.3.2. Energy sources:

Before it was closed during Covid-19 pandemic and the subsequent renovation works electricity consumption at the lodge ranged between 90-120 kVA per day. The diesel-powered generators were the sole source of energy for lighting, heating and maintaining the cold rooms. The 24-hour

electricity supply depended on three Perkins-type generators with different capacities ranging from 150kVA, 275kVA to 350kVA. Notices were placed in guest rooms to assist conserving power but the hot water pipes were not properly insulated, which caused significant loss of heat energy thus increasing the cost of generating electricity. The use of several chest freezers in the kitchen was another area that contributed to inefficiency in the energy consumption.

Liquefied petroleum gas (LPG) was the source of energy for cooking at the main, staff, and tourist driver guides kitchens. The LPG was supplied by the Gas suppliers from Arusha city and stored in 5,000-litre and 2,000-litre gas cylinders for the guest and the staff village kitchens respectively. The cylinders were located about 100 meters away from kitchens, fixed on concrete foundation and the gas supplied using the steel pipes. The steel pipe is durable and it withstands pressure thus, making it suitable for carrying the gas safely.

The average LPG utilization per day was 30kg and 20kg for the guests and staff/drivers respectively. Thus, LPG supply from Arusha to the Lodge was done after every six months. The LPG cylinders with the same capacity will be maintained and endure for approximately the same period because energy saving strategies, which are recommended in this EIS will reduce daily utilization. Waste oil from generators was collected into covered tanks at the rear of the generator house through a pathway screed with cement. The tanks were emptied when full and sent to Arusha for recycling by grease and bitumen manufacturers. This approach for oil management will be maintained.

Fuel leakage in the generator rooms was trivial because the mounted fuel tanks were filled directly from the fuel pump. The major sources of air pollution at the facility before it was closed were carbon-dioxide (CO₂) and fumes from the boilers, generators and the practice of burning waste in the open. Hot water from the boiler was mainly used in guest rooms, kitchen and the restaurant. Failure to position the boiler at more or less central point of the guest rooms and the main house resulted into using a lot of fuel to keep water hot all the way into the destination, the system, which is recommended for improvement in this EIA report. Rechargeable lamps and torches will be available to visitors and workers for mobile lighting during the night when moving from one point to the other within the facility's premises. Limited firewood will be brought from outside the NCA for warming.

2.4. Waste management facilities

➤ Solid waste

Labelled containers for disposal of different types of solid waste are, and will continue to be provided in all waste-producing areas. A centralized solid waste sorting area will be located within the staff village and the waste secured from scavengers within a wire mesh cage. While burnable waste will be blazed in the furnaces, wet waste will be dropped in pits fitted with a lid on top to prevent scavengers, non-biodegradable and hazardous waste will be kept in separate containers at the site and later on transported outside the NCA for disposal by a hired licensed company.

➤ **Liquid waste**

➤ **Environmental management committee**

An environmental management committee, which was functional before the Lodge was closed down shall be reestablished when the facility will be re-opened. The committee will meet regularly, produce reports regarding environmental aspects and internal risks and submit them to the Lodge management for implementation of its findings and recommendations as it did before the facility was closed down.

2.5. Project Implementation Phases

2.5.1. Pre-Construction Phase

➤ **Missions and professional studies**

Project activities during pre-construction phase involved the preparation of architectural designs and the Bill of Quantities (BOQ). Hydrogeological survey, water chemistry, physics and bacteriological analysis and the ongoing EIA.

➤ **Closure and demolition of the main house and its associated components**

During the Covid-19 pandemic, the Lodge was closed and thereafter the main house, which consisted of a lobby, reception, lounge, restaurant to take up a maximum of 180 visitors, bar to accommodate up to 50 people, curio shop, business center, administrative offices and conference room with capacity of housing up to 200 people at one particular time and an idyllic spot to serve mid-session snacks was demolished to give way for reconstruction of a new and modern one. Consequently, a crusher was installed at a location past the lodge staff village about half a kilometer to the south-east of the demolished main building where crushing the rubble and production of concrete blocks and the paves is conducted. Renovation of the existing guest blocks started commenced early in 2024 and was going when environmental experts visited the site in June 11th, 2024.

List of structures to be demolished and renovated

- (a) Main building and common swimming pool
- (b) Two-storey accommodation buildings
- (c) Staff block
- (d) Managers house
- (e) Workshop

The rest of other strictures are renovated without any demolition activities; it involves replacing the roof and repainting. The demolitions are done by using modern machines and demolished materials are reused in construction activities by making bricks and backfilling. The other complete wastes are taken to dumping site in Arusha city as shown in appendix 6

➤ **Mobilization**

Transportation of machines, purchase and transportation of various construction materials such as aggregates, wood, bricks, cement, iron bars and sand, commenced before starting the renovation of the existing guest rooms, which is currently going on. Similarly, removal of some

materials from the demolished structures like redundant wood and transporting them outside the site for appropriate disposal was done during mobilization. Both transportation of building materials into, and the waste outside the site is through Loduare gate, which is located about 25 kilometers from the Lodge.

Prior to commencing reconstruction of the demolished main house and construction of the proposed new presidential suites and associated facilities, construction vehicles, equipment and machines shall be transported from Arusha city to the site. A list and particulars including registration numbers and models of all construction equipment, machines and vehicles (Table 2.2) shall be submitted to the NCAA for approval before commencing construction works.

In the event of any addition or substitution of construction vehicles, machines and equipment NCAA shall be informed for approval before bringing the same to the site. To ensure that resources are used efficiently, construction materials such as aggregates, stones and sand shall be collected and transported either from Arusha city, Mto-wa-Mbu or Karatu by the vehicles travelling from Arusha to the site for the first time.

Table 2. 1: List of vehicles, machines and equipment that will be transported to the site

S/N	Machine and Quantity	Amount	Duration of stay at the site (Months)	Function
1.	Excavator	1	10	Digging up the soil
2.	CB front end loader	1	15	Loading the soil into tipper trucks
3.	Motor Grader	1	5	Site clearance and grading
4.	Tipper trucks	3	18	Transportation of building materials
5.	Flat-bed truck	1	18	Transportation of heavy machines
6.	Toyota Pick-up	1	18	Supervision
7.	Compactor	1	12	Soil compaction
8.	Concrete Mixer	1	18	Mixing of concrete
9.	Wheel barrows	10	18	Distributing materials

Source: Management of The Ngorongoro Sopa Lodge (August, 2024)

➤ **Erection of a temporary camp for the renovation and construction team**

About 80 people are currently involved in the renovation of the existing guest rooms, who will also be involved in the reconstruction of the main building and construction of the proposed presidential rooms. Out of the total, 10 are skilled including engineers and planners and the remaining 70 are labours. The skilled personnel are accommodated in three out of the five guest rooms, which are currently not under renovation because they will later on be demolished and replaced by new guest rooms in the currently undeveloped land together with other proposed presidential suites. A temporary camp built of green-coloured corrugated iron sheets that blends with the natural environment was constructed near the demolished main house to accommodate unskilled people.

The construction people are provided with all the meals at the site and a ranger and other relevant staff from the NCAA are invited to visit the site regularly to enforce compliance of the NCA regulations particularly to ensure that unauthorized movement outside the construction camp is controlled. While the construction people are required to secure food to prevent wildlife attraction and the ultimate habituation, the contractor is obliged to ensure that waste is sorted according to type on daily basis, kept in different containers and disposed as appropriately as required outside the NCA.

Majority of the casual labourers are recruited from within the NCA and the nearby Karatu District, which is relatively closer to the NCA. However, the number of the construction people will vary from time to time depending on the stage of construction reached. A construction camp consists of pit latrines and showers, a store for keeping building materials and an open area covered with canvas where meals are taken by non-skilled labours. Skilled personnel take their meals at the dining room that was used by tourist driver guides before the lodge closure, which is located opposite to the staff village.

➤ **Water supply**

The hydrogeological and geophysical survey that was conducted in December, 2023 determined that there is potential for plenty underground water with desirable aquifer depth, thickness, type and density for borehole drilling at the Global Positioning System (GPS) coordinates 36M 0797424 UTM 9652478. According to the hydrological and geophysical survey, the recommended drilling site is located at permitted distance away from potential sources of pollution as provided by the Guidelines for Groundwater Exploration and Well Drilling, 2019.

Although the amount of yield per unit time is not indicated in the report, it was reported that aquifer thickness at the recommended point is 50m, the water is slightly salty and drilling depth was estimated to be between 100m and 160m deep (Appendix 10). After obtaining a permit from the Internal Drainage Basin Water Board a borehole will be drilled and thereafter a water-use right permit sought from the same government institution. Water from a borehole will be pumped into underground reserves tanks using a submersible solar-powered pump. Total capacity for the reserve tanks will be 300,000-liters.

2.5.2. Construction Phase

Tasks in the reconstruction of the main house and construction of the proposed new presidential guest rooms will commence as soon as all necessary permits including the EIA certificate have been obtained. Unless otherwise, all construction works for the proposed new presidential suites and associate facilities and reconstruction of the demolished main house will be completed within 18 months. Construction and reconstruction activities will be divided into three sub-phases namely substructure, which will take almost six (6) months, superstructure (twelve months) and removal of temporary erections, landscaping and restoration of disturbed areas including replanted with indigenous tree species. During construction, the frequency of vehicles and workers' movement will be highly controlled. Efforts will be taken to minimize environmental risks by strictly adhering to all mitigation measures that will be recommended and approved in the EIS.

➤ **Types and Sources of Construction Materials**

Table 2.1 shows a summary of types of construction materials, their sources and reasons for preferring relevant sources. Majority of building materials including, timber, treated poles, corrugated iron sheets, cement and window and door frames and shutters, chipboards, gypsum, roofing materials, glass, tiles and paint will be procured from Arusha city entering through Loduare Gate as bulk purchasing reduces the cost per item unit. Whereas aggregates will be purchased from Karatu Township and sand from appropriate villages in Karatu District, concrete blocks and the paves are produced at the site, where a crusher was installed and the rubble from demolished buildings forms the main source of the material. Sand from Karatu District, which is believed to be the major agent of alien plants introduction in NCA, will be collected from quarries to be identified by the NCAA and screened carefully before bringing it at the site.

Natural fibre, poles and thatch grass will be procured from Mto wa Mbu in Monduli District where the preferred and durable type is available. Notwithstanding this preliminary arrangement, the final decision on locations where building materials will be obtained will depend on availability, sustainable supply and assurance of leaving light footprint and supporting reversible development philosophy. All access into the NCA will be requested and reported to the NCAA Management according to prevailing regulations and guidelines.

Table 2. 2: Types and sources of building materials

S/N	Type	Source	Justification of the source
1	Aggregates	Karatu Township	This is a relatively closer location where availability of these materials is not limited. Purchasing this type of materials from the neighbouring district will make local communities' benefit from the presence of the facility in their vicinity.
2.	Sand	Villages in Karatu District	This is a relatively closer location where availability of the material is plenty. Purchasing this type of materials from the neighbouring district will make local communities' benefit from the presence of the facility in their vicinity.
3.	Natural fibre, poles and thatch grass	Mto wa Mbu in Monduli District	Preferred types are available in the area and will make villagers appreciate the presence of the facility in their neighbourhood.
4.	Round and flat steel bars	Arusha city	Available in bulky from the factory and average price per unit always go down when procured in bulkiness.
5.	Cement	Arusha city	Available in bulky from the factory and average price per unit always go down when procured in bulkiness.
6.	Concrete blocks and the paves	Manufactured at the site	The crusher and production machines for crushing rubble from the demolished buildings already installed at the site.
7.	Treated round wood	Arusha city	Available at relatively cheaper price than from closer areas and transportation cost reduced when transported with other materials

8.	Sawn soft timber	Arusha city	Available at relatively cheaper price than from closer areas and transportation cost reduced when transported with other materials
9.	Chipboard, gypsum and plywood	Arusha city	Available at relatively cheaper price than from closer areas and transportation cost reduced when transported with other materials
10.	Door and window frames and shutters	Arusha city	Readily available at relatively cheaper price than other closer areas and transportation cost reduced when transported with other materials
11.	Solarium glass for windows and doors	Arusha city	Readily available at relatively cheaper price than other closer areas and transportation cost reduced when transported with other materials
12.	Corrugated iron sheets	Arusha city	Available in bulky from the factory, average price per unit always go down when procured in bulkiness and transportation cost reduced when transported with other materials
13.	Electrical devices	Arusha city	Available at relatively cheaper price than other closer areas and transportation cost reduced when transported with other materials
14.	Plumbing devices	Arusha city	Available at relatively cheaper price than other closer areas and transportation cost reduced when transported with other materials
15.	Emulsion paint	Arusha city	Available at relatively cheaper price than other closer areas and transportation cost reduced when transported with other materials
16.	Furniture	Arusha City	Various designs will be needed and available in the area
17.	Utensils	Arusha City	Different types will be needed. And available in the area

Source: Consultation with the Proponent (June, 2024)

➤ **Transportation of building materials**

Larger part of the construction materials is coming, and will continue to come from Arusha city, Mto wa Mbu area and Karatu District and brought into the NCA through Loduare gate. Delivery of all construction materials to the site is by trucks of not more than 10 tons capacity to limit soil trampling. Frequency of vehicle and workers' movements to, and from the site will be highly controlled during construction.

➤ **Food supply to the construction crew**

Since all the people to be involved in the construction activities will stay at the site, they will be provided with all meals. The construction camp will be supplied with food twice a week for perishables like meat and vegetables to be purchased from Karatu Township. Bulky supplies for non-perishable supplies like maize flour, beans, rice and cooking oil will be delivered at the site on monthly basis from Arusha city where the Company's sub office is located. The construction

team will be required to take care of food remains from scavengers and the contractor will be responsible for appropriate sorting of the waste and dispose it as appropriately as required.

➤ **Water supply**

Water during construction phase will be supplied from a deep borehole, which a hydrogeological and geophysical survey established that the drilling depth will be between 100m and 160m deep (Appendix 10). Approximately 20,000 liters of water will be needed during construction including personal use like bathing, in toilets and washing clothes; construction works; cleaning premises and construction equipment; cooking; and splashing the soil to reduce dust. A submersible generator-powered pump will propel water from the underground reserve tanks and distribution will be achieved through black synthetic pipes, which will be laid and covered at least half a metre under the ground. Maximum distance from a borehole to underground water storage tanks is about two (2) kilometres.

➤ **Source of energy**

All cooking at the construction site will be done using Liquefied petroleum gas (LPG) to be procured from Arusha city in a 15-kg cylinder. Power for lighting, fabrication and casting during construction will be sourced from the existing diesel-operated generators.

➤ **Total investment cost**

Total investment cost for renovation of the existing structure mainly the guest rooms, staff village and tourist driver guides; reconstruction public area at the developed wing, the proposed new presidential suites and public facilities at the proposed presidential wing is estimated to be 47.4 billion as summarized in Table 2.2.

Table 2. 3: Summary of the total investment cost for the proposed modernization and expansion of the Ngorongoro Sopa Lodge.

S/N	ITEM	TOTAL AMOUNT (TZS)
1.	Renovation of the existing guest rooms	19,300,000,000
2.	Reconstruction of the demolished main house and associated amenities	10,700,000,000
3.	Construction of the proposed presidential suites and associated services	11,300,000,000
4.	Construction of the main house for the proposed wing for presidential and associated facilities	6,100,000,000
TOTAL		47,400,000,000

Source: Consolidate Tourist and Hotels Investment Limited Management (July, 2024).

➤ **Security in the NCA**

Before commencing reconstruction and construction of the proposed new structures, a list of names and photographs of all the people at the construction site shall be submitted to the NCAA Management. Further, the names of those who are currently involved in the renovation works shall be submitted to the Authority. Any worker expelled or who will terminate employment shall

be reported immediately to the NCAA Protection Department. Movement beyond the construction site will be monitored and visitation as well as unauthorized guests shall be prohibited. The NCAA will be requested to allow a ranger to visit the site on regular basis during construction phase to protect workers from wildlife attacks and enforce the NCA rules and regulations. Construction activities shall be conducted throughout the week between 07.30 and 17.30 hours except Sundays and Public Holidays. To control unauthorized movements of workers outside the construction camp, roll-calls shall be taken every morning before the work starts and tonight before going to the bed.

➤ **Occupational safety and health**

Sufficient protection from injury, which may result from construction works, shall be ensured. Construction workers shall be provided and required to use personal protective equipment (PPE) including but not limited to pair of overall, pair of boots, helmet, pair of hand gloves, mouth masks, earmuffs and eye shields. Signboards shall be placed and maintained on the site to remind workers to use the gear. The contractor shall avail a fully-equipped first aid kit at the construction site and a vehicle shall be stationed full time to transport injured workers who will need referrals. Enough hand-held fire extinguishers shall be provided at the site to fight unplanned fires. Sanitation at the construction site shall be maintained to the satisfaction of the labor and health authorities and inspected after every three months by the District Labor and Health Officer.

➤ **Landscaping**

At the end of the construction phase landscaping shall be conducted to restore the scenery to its original state as possible. Despite that cutting down of trees during construction particularly at the undeveloped site where the presidential suited are proposed to be constructed will be limited, appropriate indigenous tree species to the area shall be planted after construction and landscaping. Indigenous trees will be supplied by the NCAA from its own tree nurseries. The NCAA shall be requested to identified all exotic plant species nurtured at in the Lodge nursely for the purpose of getting rid of them. All Walkways to connect all structures will be stabilized with steep angle including casting concrete and laying stones to avoid skidding. All lights along walkways will be down-casted to reduce direct illumination.

➤ **Types, sources and management of waste during construction**

▪ **Solid Waste**

Solid waste to be generated during construction phase will include food leftovers and remains of construction materials such as timber, nails, cement bags and tins. All waste will be sorted and kept in separate containers. Biodegradable waste mainly food residuals will be buried in deep holes, covered with hard lid to deter scavengers and left to decompose. However, precaution will be taken to ensure that only food that construction people will consume and finish is cooked. All recyclable materials will be transported to Arusha city and delivered to dealers of recyclables. Wastes, which are not recycled anywhere in Arusha Region will be transported outside the NCA and dumped at Bashay dumping site, which is located about six kilometers

from Karatu Township. Hazardous waste like metals, tyres and batteries will be collected and returned to retailers for either recycling or appropriate disposal.

▪ **Human waste and wastewater**

The renovation site is currently provided with 10 pit latrines and 10 shower rooms for the laborers. Shower rooms are attached to pit latrines where wastewater is directed through a pathway constructed with screed cement. When full, the pit latrines will be covered and new ones dug, which will continue to be used by unskilled workers when reconstruction of the demolished main house and construction of new proposed structures will commence.

Disease vectors especially flies from pit latrines as well as germs and bacteria from garbage collection centers will be controlled by spraying disinfectant, which also inhibits offensive smell. The contents of the preferred disinfectant will be water, perfume, surfactants, preservatives, color and hydrochloride. At the end of construction pit latrines whether will be full or not, they will be covered. Senior staff and professionals during construction will be accommodated in four existing guest blocks, three of them will be demolished later on and replaced with the same number in the new wing and one will be renovated to accommodate senior staff when the Lodge will be re-opened.

2.5.3. Operation Phase

Main services to be provided during operation phase following re-opening of the Lodge will be transportation of tourists in, and outside the facility by the Proponent and other tour operators; accommodation; provision of meals and drinks; laundry and awareness lecturers. Important to operating the Ngorongoro Sopa Lodge effectively and efficiently shall be sustainable provision of water, electricity and security. Secondary services will be but not limited to game viewing safaris and bird watching in fully equipped vehicles, swimming in man-made pools; Spa, sauna and massage; bush breakfast and lunches as well as outdoor dining and sunset walks on request from, and approval by the NCAA; baby-sitting; children's menu and pool; honeymooners' suites; traditional dances; wedding facilities; gift shopping and internet. Haulage of foodstuffs and supplies, appropriate disposal of solid and liquid waste and other related activities will also be conducted. Accommodation, meals and other welfare services including occupational health and safety will as well be provided to employees.

(a) Staff recruitment and working environment

▪ **Recruitment**

Establishment at the proposed renovated and expanded Ngorongoro Sopa Lodge will be 180 employees both junior and senior staff. Majority of the staff will be those who worked with the facility before it was closed down, others will be transferred from lodges owned by the Company in the country and neighbouring while a few will be few recruits. All members of the staff will be employed under the unspecified period of time previously known as Permanent and Pensionable. Although employment priority will be given to people from neighbouring communities with qualifications, recruitment will be done through advertisement and interviews. The management of the Consolidated Hotels and Investment Limited is enthusiastic to have a balanced masculine and feminine gender but since majority of females are not interested to work

in remote areas, those with requisite qualifications will be encouraged and motivated to apply and will be given priority to enable attain at least 20% of all permanent employees.

More staff will be recruited on short-term contracts during tourist peak periods and on special assignments. There will be a room for up to 10 students to conduct their practical training anytime of the year. Both permanent and temporary-employed staff shall be provided with full boarding, transport from, and to their place of origin during recruitment and annual leave as well as medical care. The Company will recruit and provide training on the job for many local individuals as possible, working in consultation with the NCAA to ensure local community inclusion and development.

▪ **Working environment**

The Company employees shall work for 40 hours a week, which is 8 hours a day for five days, as legally provided. To comply with the law regarding working hours, shifts shall be arranged in such a way that, hours spent working for each employee shall not exceed those provided by the law. Where an employee will be engaged on work for more than the specified working hours, overtime allowance shall be paid according to prevailing labour law and associated Regulations. Contracts with employees shall comply with the Tanzanian Labour Laws and will have competitive rates of pay and benefits including the National Social Security Fund (NSSF) scheme and the National Health Insurance Fund (NHIF) membership. All meals shall be prepared at the staff kitchen by the cooks who will be part of the Lodge employees and served in a designated canteen where other recreation activities shall be provided. With the exception of coffee and tea making, other types of cooking in sleeping rooms will not be allowed.

(b) Marketing

Marketing for Ngorongoro Sopa Lodge has been done for over 30 years since it was established in 1992 as it is being done for other facilities, which are owned and operated by the Consolidated Hotels and Investment Limited within the country and elsewhere. The word of mouth has been the major way due to the fact that the facilities provide high quality services commensurate with the requirements of international guests, who spend night(s) in the protected areas like the NCA. This strategy enables visitors to market the facility positively to potential clients. Secondary techniques for marketing the facilities and services provided involve a combination of familiar instruments such as advertising on websites of the Company, subsidiary and collaborators; distribution of brochures and travel magazine; and advertising on print and electronic media including Compact Discs (CDs) and Digital Video Discs (DVDs).

Electronic marketing has continued to be very useful in individualizing and customizing the services provided at Ngorongoro Sopa Lodge as well as identifying customers who are more valuable and potential of being more worth to the business and therefore plan marketing offers, which fit in their needs. Further, the Company participates in International Trade Fairs in both traditional and emerging tourist market within and outside the Africa Continent. Participation in local trade fairs is also part of the Company's marketing strategy. Intensive use of sales agents, marketing executives and collaborating tour operators, form the core strategy to increase the tourist market share of the Ngorongoro Sopa Lodge.

(c) Visitor transportation and accommodation

Most of the visitors who were and will continue to be accommodated at the modernized and expanded Ngorongoro Sopa Lodge were/will be on package program and brought at the Camp by the Company vehicles and of other tour operators prior to making reservations. Other visitors without prior reservation will be accommodated at the Lodge when the rooms are not booked. Each of the guest tent will be provided with a hand-held radio for internal communication particularly with the reception and security guards while external contacts will be accessible through the satellite internet, mobile phones, satellite phone and Very High Frequency (VHF) radios.

(d) Food supply

The major source of food supplies has been and will continue to be Arusha city where the Company's sub-office is located. Nonetheless, most of the perishables like fruits, meat, eggs, honey, vegetables and spices are and will continue to be purchased from a market in Karatu Township and from the nearby local communities in Karatu District should they be available on sustainable basis and meet required standards. Local people in those villages shall be encouraged and supported to produce foodstuffs that will meet requisite quality and standards so that the proposed facility continues to be their reliable market.

(e) Water supply

The source of water shall be borehole; water harvested during rain (about 3million litres be stored onsite) and wastes water to be recycled for non-human consumptions. The average water utilization at the Ngorongoro Sopa Lodge when guests will increase to 220 people, staff to 180 and tourist driver guides to 40 at full occupancy as well as installation of modern water serving devices and the use of recycled water in non-human consumption activities like vehicle washing, garden irrigation and laundry is estimated to be about 50,000 litres ranging from 66,000 litres during peak to 33,000 in the low tourist season. Utilization assumes that each visitor (220 persons) will utilize 100 litres per day for washing hands and face, flushing in the toilet and bathing while each lodge employee (180 people) and a tourist driver guide (40 individuals) will utilize an average of 50 litres per day. This estimate will add to 33,000 litres per day at full capacity that will account for 50% of the total amount to be utilized at the Camp. The remaining 50% will be for cooking, laundry, washing and cleaning both the indoor and outdoor premises.

The assumption is further made that during high tourist season the facility will be fully booked and in the low season the average occupancy will be 50% and therefore total water utilization drop to an average of 16,500 litres per day. All the underground storage tanks with total 300,000-litre capacity will suffice utilization for at least three (3) days during peak season in case of water supply system failure.

(f) Power supply

The main source of energy for lighting, water pumping, heating, and running electrical the natural gas-operated generators. Because the sunshine at the Ngorongoro Sopa Lodge is rare when available occurs in few hours, power from solar will be tapped for back. The bio-gas will be used for heating the boilers for supply of hot water. The natural gas will be supplied by dealers form Arusha city and stored in a 5,000-litre natural gas cylinder that will be fixed on a strong cement foundation to withstand the weight of the full container.

Energy saving gadgets will be installed, high energy utilization equipment like several chest freezer in kitchens replaced by the modern technology and heating done by the bio-gas that will be produced from the water recycling process among other strategies. Thus, the existing three diesel-run generators will be replaced by the same number and capacity i. e 150kVA, 275kVA to 350kVA with natural gas-run generators to operate all the facilities to be contained in the developed 10.1-acre piece of land and the proposed new wing that will be established in the undeveloped 3.4-acre area. Notices will be placed in all public areas to remind the Lodge users to assist in the energy saving efforts putting off power when areas are not occupied and insulating the hot water pipes.

The photovoltaic (PV) that will generate approximately 100kVA will be installed in a solar-energy farm and batteries with capacity to save 50kVA and inverters shall be connected to the panel system to produce the back-up energy. An alternating current (AC) coupling system where the solar energy is first used to power the loads, then charge the batteries and the excess feed back to the grid will be adopted to ensure electricity is available when needed.

The LPG that will be supplied by the Gas suppliers from Arusha city and stored in 5,000-litre and 2,000-litre gas cylinders for both the guest and staff/driver guides' kitchens respectively will be the main source of energy for cooking. The cylinders will be placed on a strong cement foundation to withstand the weight of the full container and located not less than 100 meters from the kitchens and/or any inflammable materials. The gas from the cylinders will be supplied into kitchens through steel polyethylene pipes, which are only approved plastic piping under the American National Fire Protection Association (NFPA) 58, LPG Code and buried under the ground. Hot showers in the guest rooms and staff/tourist driver guides' houses shall be supplied from solar-dependant heaters. Rechargeable lamps and torches will be available to visitors and workers for mobile lighting during the night when moving from one point to the other within the facility's premises. Limited firewood will be brought from outside the NCA for warming during cold weather.

(g) Laundry services

There will be a laundry located within the staff village, which will consist of four (4) washing machine each with capacity to wash 10kgs at one particular time and two (2) small washing machine each with capacity to handle 10kg for washing clothes requiring different treatment depending on quality of the linen, degree of bleaching and level of dirtiness. The laundry will also contain four (4) drying machines each with capacity to dry 10kg and two (2) ironing machine. Different rooms to keep the dirty, washed, dried and ironed clothes as well detergents of different chemical compositions will be provided at the laundry.

(h) Recreation services

Game viewing, bird watching and expeditions to enjoy and experience the distinctive scenery of the NCA and surrounding areas while in vehicles will be the major recreation services to be provided to visitors who will be accommodated at the modernized Ngorongoro Sopa Lodge. Enjoying the sunrise and sunset from the well-positioned balconies both at the main houses and guest rooms will be ensured. Short distance walks and long safaris as well a night drives on

approval by the NCAA will be guided by experienced staff and individuals from the local community. The guides will be provided with hand held VHF radios to ensure walkers and night viewers stay in touch with the Lodge Management.

Photographic safaris, bush breakfast and sundown meals will be other recreational services to be provided within a 3.4-acre piece of land leased to Ngorongoro Sopa Lodge by the NCAA. Mobile and permanent photographic hides, which will blend with the environment for maximum camouflage and best photographic opportunities, will also be provided within the leased piece of land. Table tennis and darts will be provided at the staff and tourist driver guides' village part of the indoor recreation activities. The public swimming pools; one in the already developed piece of land and the other in the undeveloped 3.04-acre site and associated changing rooms and toilets for both males and females; outdoor bar and snack shop; Spa, sauna, massage and gymnasium rooms will similarly provide recreation affairs at the modernized Ngorongoro Sopa Lodge.

Whereas each of the three new luxury suites will consist of a swimming pool at the basement with associated facilities and a plunge pool in each of the 23 new standard guestrooms, other specific recreation services will be baby-sitting, bedroom minibar, which will be stocked on request, bedroom television in each room at the new wing, board games, traditional dances, wedding facilities. Further, the guests will have prospects for educational tours and visits to historical and cultural sites located within and outside the NCA.

(i) Community engagement

In addition to employment opportunities, communities will also benefit from educational, historical and cultural tours to special sites by tourists inside and outside the NCA particularly in Karatu District. Tourist guiding and interpretative services particularly on the historical and cultural heritages available in the Conservation Area and neighbouring areas will be done mainly by members from the local community. Local communities especially those from the neighbouring Karatu District will also benefit from prospects for supplying foodstuffs, vegetables and fruits and selling souvenirs and locally made artefacts and performing organized traditional dances at the Lodge and designated cultural bomas located within the NCA. Local people will be encouraged and supported to produce goods and services of the requisite quality and standards.

2.5.3.1. Occupational and public safety and health

(a) Uniforms and personal protective equipment

Uniforms and the PPE shall be provided to all employees according to departmental needs and their use will be enforced. In order to comply with the Occupational Health and Safety Act, Cap. 297, professionals from OSHA shall be invited annually to impart health and safety education and diagnose the workers' health conditions.

- (i) **First Aid Kit**, The Company shall install equipped first aid kit with all recommended equipment's by OSHA. During operation First aider and health representative shall be trained and certified by OSHA.
- (ii) **OSHA Logbook**: A logbook for recording accidents and incidents in all project phases shall be available at the site as provided by OSHA guidelines.

- (iii) **Emergency Assembly point** shall be two assembly points; one in front of the main building and the other within the staffs and tourist drivers' accommodation premises will be designated in an open and easy to access areas and placed with a clear signboard
- (iv) **General hygiene:** Whereas the architecture of staff accommodation facilities provides enough space in the sleeping rooms to avoid congestion, good ventilation and proper systems for waste disposal for both soil and liquid, professionals from OSHA shall be invited annually to give health and safety education and diagnose the workers' health conditions to comply with the Occupational Safety and Health Act, Cap. 297. Guests will be cautioned from drinking tap water and advised utilize complimentary bottles of water that will be provided in each room.

(b) Protection against fire

Preparedness for controlling risks from fire and buckets filled with sand will be realized by placing hand-held fire extinguishers at strategic places within the Lodge compound. Although there are no recorded cases of bush fire at the proposed site, vegetation on a 2-meter stretch around the 13.5-acre perimeter will be slashed in consultation with the NCAA to prevent propagation of wildfire into the property in case it occurs. Warning notices will be placed at all areas with potential for fire explosion prohibiting smoking. All other precautions against wild and in-house fires as provided in the lodge's emergence preparedness and response plan (Appendix 9) shall be complied with.

(c) Protection against wild animals

Protection of workers and guests against wild animals shall be emphasized by providing awareness education and placing sign boards in visible areas requiring the occupiers to comply with the NCAA rules such as not walking beyond the allowed areas without a guard and not feeding wild animals in any way. Besides lights that shall be fixed along walkways, there will be security guards with hand-held radio sets for communication and rechargeable torches to escort visitors to their rooms during the night. Armed guards from registered security company to be assisted by local individuals with traditional knowledge on animal behaviour shall be recruited full time at the Lodge. A vehicle will be stationed full time at the Lodge to attend emergencies such wildlife attack incidents in addition to performing other duties. Each guest tent will be provided a hand-held radio (walkie-talkie) to communicate and a torch fixed with a whistle to alert security guards in case of emergency.

(d) Sanitation in the swimming pool

Proper sanitation of the swimming pools will be ensured to maintain the visual clarity of water and prevent transmission of infectious diseases. Application of disinfectants to kill infectious microorganisms particularly *chlorine 90*, *Pool Magic*, *Chlorine stabilizer*, *Calcium chloride*, *Clarifier*, *pH increaser & reducer* which is relatively economical with ability to destroy and deactivate a wide range of potentially dangerous bacteria and viruses will be applied.

To control the risk of disease transmission from infected swimmers, body oil, sweat, cosmetics, urine, saliva and faecal matter that may react with chlorine to produce trichloramine and cyanogen- chloride chemicals, shower rooms shall be provided for taking bath before and after swimming. Regular analysis of the pH level will be undertaken to maintain allowable limits in the

swimming pool. This is because higher pH drastically minimizes the sanitizing power of chlorine and lower pH causes discomfort to swimmers especially to the eyes.

Other potential sources of the pool contaminants could be windblown dirt and debris, incoming water from unsanitary sources, rain containing microscopic algae spores and bird droppings. To control this risk, an electrically operated water pump to re-circulate water by a reverse osmosis system and allow air circulation to limit the building up of harmful compounds will be installed. Water filter to remove pollutants will also be fixed. So long as the swimming pools will be treated with chlorine, ant-stain and flocculants; water from the pools will be purified by aeration process for recycling and re-use.

Trained lifeguards who will be physically fit, carrying whistles and wearing distinctive clothes for easy spotting will always be around when guests are using the swimming pools. The lifeguard will be the ones with ability to swim on the front and back for 100 meters without stopping. Awareness to swimmers on hazards and risks at the facility will be made through display notices at the reception, in changing rooms, in the guest rooms and on pool sides. While the floors, stairs, internal walls and the whole premises at the pools will always be tidy, dustbins for waste disposal will be provided and emptied every night.

(e) Safety at the swimming pool

To ensure security to guest during swimming, a trained lifeguard who will be physically fit, carrying a whistle and wearing distinctive clothes so that he/she can easily be seen will always be around when guests are using a swimming pool. A lifeguard will be the one with ability to swim on his/her front and back for 100 meters without stopping. Awareness to swimmers on hazards and risks at the facility will be made through display notices at the reception, in changing rooms at the pool, in the guest tents and on pool sides. While the floor, stair, internal walls and the whole premises at the pool will always be tidy, dustbins for waste disposal will be provided and emptied every night.

The swimming pools shall be located and designed to prevent trespassing by wild animals and particularly the elephants and accessibility routes can be used by disabled people by constructing ramp for wheel chairs. Awareness to swimmers on hazards and risks at the facility will be made through display notices at the reception, in changing rooms, in the guest rooms and on pool sides. Pool warning signs such as NO DIVING, NO PUSHING and DON'T SHOUT and DEPTH MARK shall be in place and sign board showing all necessary warnings signs relating to swimming pool use safety shall be installed as well.

2.5.4. Types, sources and management of waste during operation

Key types of waste at the proposed PTC during operation phase will be solid and liquid waste.

(a) Solid waste:

Assuming every person (220 visitors, 180 lodge staff and 40 tourist driver guide) at the Lodge during high season will generate an average of one kilogramme of solid waste per day, maximum of 440kg will be generated at full occupancy during the tourists' peak season. Management of solid waste will first and foremost involve purchasing of supplies that are packed in decomposable containers. Generation of plastic bottles at the Lodge will be reduced by providing

filtered water in re-usable glass bottles in the restaurant, bar and guest rooms and refilled every morning. Drinking water at the staff as well as tourist driver guides' canteens will be provided filters.

This will be followed by provision of containers for disposing different types of waste at all generation points, collecting the waste regularly and delivered at the designated and centrally area for proper sorting. After sorting, organic waste mainly composed of food leftovers and estimated to account for about 25% of all solid waste will be deposited in deep holes covered with steel sheet to prevent scavengers but with a small door on the top to allow dropping the garbage and left to decompose. Another 25% will be composed of burnable waste such as lunch boxes, which will be blazed at the site in a furnace with openings to let smoke exist in the air erected above the height of all buildings at the Lodge structures.

The remaining 50% will be non-decomposable waste that will include plastic and glass bottles, plastic papers and cans, which will be stored temporarily in different containers within a cage made of wire mesh to prevent scavengers. Non-decomposable waste, which is currently not recycled anywhere in the Arusha Region shall be transported and dumped at Bashay dumping site, which is located few kilometres from Karatu Township and owned by Karatu District Council. The recyclables shall be transported to Arusha city by a hired and registered waste transporter and donated to associations, which conduct recycling preferably the "Maendeleo Plastic and Recycling Company or Shanga group, which are currently active in the respective business in the city of Arusha.

(b) Hazardous ns e-wastes

Although little amount of hazardous waste such as obsolete solar appliances, batteries and related accessories will be generated regularly but may cause far-reaching danger to the environment as well as to humans and animal health, will be kept at the site in separate containers and delivered to retailers in the city of Arusha once enough is accumulated, for either recycling or appropriate disposal. Education and awareness to workers and visitors on the importance of proper sorting of waste will be part of solid waste management at the facility.

(c) Liquid waste

An initial environmental audit that was conducted in 2015 revealed that the wastewater from different generation sources including staff and drivers' ablutions, kitchens, laundry, guest bathrooms and toilets were collected into soak away pits through septic tanks adopted on the gradient using radiating arms. Black and grey water were neither separated before entering in this waste disposal system nor recycling of wastewater was conducted at the Ngorongoro Sopa Lodge because the original design did consider the option. The daily average discharge of wastewater ranged between 15,000 and 18,000 liters per day depending on the occupancy. Due to ineffectiveness of soak away pits system to properly disposal wastewater over years of the lodge operation, their number were increased over the time.

After modernization of the Lodge, management of liquid waste will first and foremost be minimized through the reduction in utilization of clean water by installation of modern toilets, which use relatively small amount of water than the traditional ones. Washing taps will have

sensors, which signal the faucet valve to turn on when the user's hands come in close proximity of the lip of the spout. Majority of the guest rooms and all the employees sleeping areas will be provided with showers, which normally consume relatively lesser water than bathtubs. The showers will be of instant heating system instead of the traditional practice where one has to wait for sometimes for the warm water to come out. Bed sheets and towels will be re-used on request from clients who will be spending more than one night. It will be ensured water that water leakage in the pipes is controlled and in the swimming pools water will be re-use through reverse osmosis system and re-circulation.

Kitchen wastes water: The wastewater that will be generated in kitchens will pass through a separator chamber to isolate fat, and the non-fat dirty water will be joined with sewage from toilets and bathrooms and directed into bio-digester septic tanks where biological treatment by oxidation will take place.

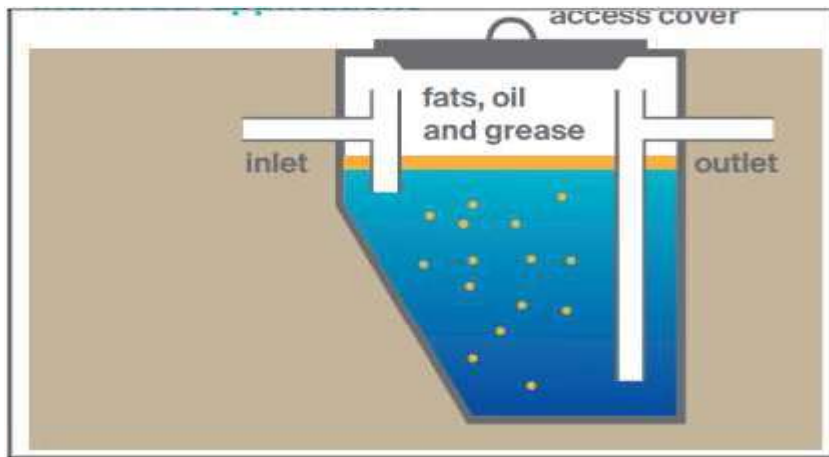


Figure 2. 4: The illustration of fat trap, source: https://design.maji.go.tz/index.php/Main_Page retrieved on May 14, 2025

The bio-digester system will replace the current-employed traditional soak away pits through septic tanks disposal system. A bio-digester septic tank is a wastewater management system that allows the recycling of water and production of biogas, which is chemically known as methane using environmentally friendly technique. The system, which is relatively cheaper and faster consists of a sealed chamber where bacteria break down organic matter commonly from wastewater in an oxygen-free environment (Figure 2.3). End products of recycling process will be clean water, the biogas, which is chemically known as methane and the bio-fertilizer.

It is estimated that 70% of the clean water that will be utilized will turn into wastewater, which amount to an average of approximately 46,200 and 23,100 litres of the 66,000 and 33,000 litres during high and low tourist seasons respectively. According to www.homebiogas.com, visited on 20th August, 2024, a bio-digester septic tank will cleanse up to 80% of the wastewater giving an estimated average of approximately of 40,000 and 20,000 liters of be clean water during high and low tourist seasons. This means that this amount of water that will be used in non-human

consumption activities like car washing, laundry and garden irrigation will save about 50% of water, which has been used in the traditional soak away pits disposal system.

Location: The water treatment plant/ bio-digester and its associated utilities will cover an area 400m² and at least 300m away from the centre of the facility. The wastes system must be in an open area and should not be near any water source or natural water as animal excrement may seep into underground water.

Sludges from treatment plant: sludge management involves a multi-stage process including thickening, stabilization, dewatering, and final disposal or utilization. This process aims to reduce the sludge's volume, toxicity, and environmental impact. The sludge shall be managed by collecting and taken to karatu area where farmers shall use as manure.

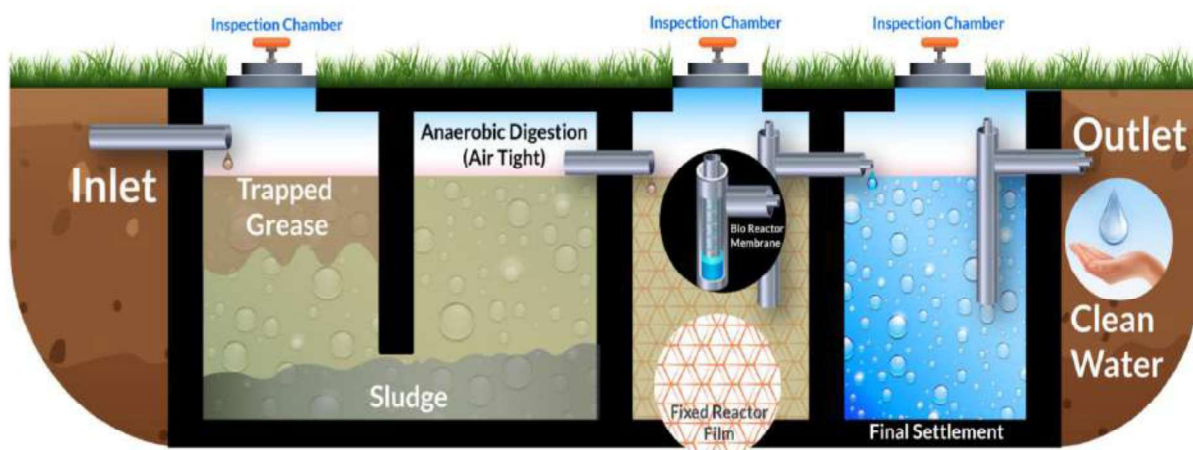


Figure 2. 5: Schematic illustration of bio-digester septic tank and the water recycling system
Source: <https://www.google.com/search?q=biodigester+waste+water+treatment+design>

With the exception of the borehole that is located about one kilometre from the leased piece of land to Ngorongoro Sopa Lodge, all the components will be confined in 13.5 acres including the existing facilities, which are under renovation and reconstruction within a 10.1-acre and the proposed new presidential suites and associated amenities within 3.04-acre as per sketch maps, which are presented in Appendix 1.

With regard to fuel management, it will be stored in purpose-built structures consisting of concrete floors with retaining edge and a drainage system into easy access sealed pit to prevent external contamination of soil or vegetation. All areas with potential for accidental oil leakage will be provided with pathways on screed cement to collect the spills in drums and deliver it to bitumen manufacturers once enough amount has been accumulated. With respect to the management of oil, the car-wash area shall be fitted with the oil-water separator to ensure that oil contaminants are screened and isolated before wastewater is allowed to flow into the bio-digester septic tank. Proper design for collection of storm water to avoid mix up with wastewater, fuel and oil is provided by the architectural drawings.

CHAPTER THREE

3.1. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORKS

3.1. Overview

This Chapter reviews relevant guiding policies and legislation to ensure compliance throughout the life cycle of the proposed project. Relevant institutions that have mandate or may be affected negatively or positively by the project are also identified as part of an administrative framework of the project. Policies, laws and international conventions related to tourism development and economic growth that relate to environmental quality, natural resources management, public health and safety and poverty alleviation, which were reviewed during the current EIA are:

3.2. Policies

3.2.1. The National Environmental Policy, 2021

Tanzania has continued to aim at achieving sustainable development through rational use of natural resources and incorporating measures to safeguard the environment in any development activities. The National Environmental Policy, 2021 seeks to provide a framework for making fundamental changes that are needed to bring environment consideration into the mainstream of decision-making in the country. The Policy emphasizes that environmental considerations should not be an afterthought in planning and decision making; rather, should be part of a conscious awareness of Tanzania's development realities.

The Policy puts more emphasis on public participation as the most effective way during the process of initiating development projects. Discussion with the Proponent showed that the Management of Consolidated Hotels and Investment Limited is committed to comply with relevant provisions of the National Environmental Policy, 2021. Further, the concession agreement, which was signed between the NCAA and the Proponent requires the latter to execute development projects in accordance with the national legal requirements and the Authority's rules and guidelines. Furthermore, due to the fact that a range of key stakeholders were involved when this EIA study was conducted, if the approved EIS and particularly the ESMP and the EMP will be implemented as appropriately as recommended, it is guaranteed that different actors will cooperate in executing the project specifically in reducing or eliminating impacts attached thereto.

3.2.2. The National Tourism Policy, 1999

The National Tourism Policy, 1999 seeks to assist efforts, which promote the economy and livelihoods of the people, essentially poverty alleviation, through encouraging the development of sustainable and quality tourism facilities that are culturally and socially acceptable, ecologically friendly, environmentally sustainable, and economically viable. It also seeks to market Tanzania as a favoured tourist destination to increase the number of tourist arrivals that shall expand the contribution of the sector to the country's economic growth.

In order to improve the tourism sector by addressing the constraints outlined in the National Tourism Policy, 1999, the National Tourism Master Plan was developed in 2000. The plan acknowledges that tourism is a highly diverse industry that requires diverse actors to realize a

complete product to offer in the marketplace. This means that, slight imperfection in any one component of the industry may destabilize the capacity of the destination to meet the tourists' expectations. The master plan thus advocates for improvement of tourism facilities with increased involvement of the private sector in the development of such facilities. To that respect, the role of the Government has remained to create a favourable environment for investment, of which the NCAA is part of on one hand. On the other hand, the private sector remains with the task of investment and operation of development projects without compromising the interests of environmental protection and delivery of quality services.

The Management of the Consolidated Hotels and Investment Limited is fairly assured that the i Company will realize the business target of the proposed project based on its long experience in the hospitality industry. The investor is well versed in the hospitality business environment, including competition, marketing techniques, complications in the international market and ups and downs of the industry. In addition to abiding to Government regulations, which require business people to pay government taxes and other pertinent fees and levies, the NCAA was convinced by the Company's compliance with regard to its environmental management system, which has persevered for the past 30 years. The developed 10.1-acre piece of land at the Ngorongoro Sopa Lodge has proved resilient to the facility's activities largely due to the Company's commitment to environmental protection.

3.2.3. The National Wildlife Policy, 2007

The National Wildlife Policy, 2007 recognises that wildlife is a natural resource of great contribution to biological diversity; environmental cleaning; climate amelioration; water and soil conservation; nutritional; and economic values. Further, the Policy provides that the existence of wildlife in the country will be achieved through system plan of Protected Area (PA) network, whose overall objective is to enhance conservation and promote socio-economic development of people in Tanzania. Furthermore, the Policy advocates for sustainable utilization of wildlife resources and requires all "significant" development projects in wildlife PAs to be subjected to the EIA. This requirement is in line with the EMA Cap. 191 and its associated Regulations.

Commissioning this EIA and the use of a checklist provided in the NCAA' Private Concession Policy, Strategy and Procedures (2019-2024) as a guide for the conduction of this study in the NCA where wildlife provides a significant attraction to visitors, is a testimony that the Proponent recognizes the importance of wildlife as an essential component of natural resources and a heritage for the present and future livelihoods and well-being of people. This action obliges the Management of the Consolidated Hotels and investment Limited to ensure that operations and activities that will be conducted at the Ngorongoro Sopa Lodge and surrounding environment particularly after renovation and extension of the facility shall guarantee sustainable existence of this heritage, and by so doing the objectives of the National Wildlife Policy, 2007 will not be compromised.

3.2.4. The Cultural Heritage Policy, 2008

The Cultural Heritage Policy, 2008 provides directives on aspects such as research, protection and conservation of cultural heritage resources and stresses the collaboration with the community and other stakeholders in cultural heritage conservation plans. Section 4.2.5 of this Policy requires all major development projects involving excavations to be preceded by Cultural

Heritage Impact Assessment (CHIA) studies. The CHIA has not been undertaken for this EIA as a separate and distinct study, but has been conducted as part of the broader Environmental and Social Impact Assessment (ESIA) incorporating archaeological and cultural studies. This integration is sufficient enough to provide the required level of details and information for decision-making.

3.2.5. The National Energy Policy, 2015

The National Energy Policy insists on the need to consider the environment in its totality. The Policy insists that issues such as energy production, procurement, distribution and utilization systems should be done in an environmentally sound manner. It requires the undertaking of the EIA before exploitation of new energy resources and afterwards conduct the assessment at each stage of energy development project. In addition, the Policy recognizes harmful activities involved in the construction of electricity facilities, their operation and maintenance. The Proponent recognizes that the use of fossil fuel for running generators may contribute relatively more on-spot pollutants than other sources such as LPG, liquified natural gas (LNG) and solar power.

The major sources of energy for lighting, maintaining the cold rooms and water pumping at the the modernized and expanded Ngorongoro Sopa Lodge will be natural gas-run generators that will replace the currently used diesel generators and backed by solar power. While cooking will largely depend on the LPG, heating will depend of biogas to be produced from the sludge that will be accumulated in the course of wastewater recycling process. Disposal of expired solar gadgets will be managed cautiously as they may cause far-reaching impact in terms of foot-prints at production places and disposal.

A natural gas-operated backup generator set will be installed in a sound-proof room and the Company's wildlife viewing and logistic vehicles to be stationed at the facility will be serviced regularly to guarantee the weight concentration of pollutants in the air are retained within allowable limits. The Environmental Management (Air Quality Standards) Regulations, 2007 limits carbon-dioxide and black smoke/suspended particulates to concentration in weight in the air not exceeding 10mg/kg and 0.08mg/kg per day respectively.

3.2.6. The National Investment Promotion Policy, 1996

The National Investment Promotion Policy, 1996 presents an outline of the country's economic development with regard to political, economic, infrastructural communication and legal systems that are currently in place. The Policy recognizes that Tanzania endeavours to build a typical self-sustaining economy focusing on the development of its human resources with a society of educated and healthy individuals and a dynamic culture and sustainable economy. The Policy emphasizes on the creation of an open market economy, which focuses on initiating an enabling environment for the private sector development, undertaking structural reforms and liberalizing the economy.

Specific to the tourism industry of which this development project belongs, the Policy encourages expansion and diversification of tourist industry by improving supportive infrastructure services, the quality and efficiency of service delivery and preservation of the natural environment. Other

focuses of the Policy are to encourage investors to invest in tourist services and infrastructure, engagement in more active tourist publicity and marketing both locally and internationally, strengthening tourism institutions and enhancing coordination among tourist services' providers.

The Policy spells out obligations of investors, which among others include (i) being serious and highly committed to participate in the country's development, the Government's efforts to alleviate poverty and obeying to the laws of the Country (ii) submitting in a timely manner, the required information to investment-support institutions to enable them implement their functions efficiently and effectively (iii) facilitating access to relevant investment-support institutions' information on the enterprise as required by the law and other relevant institutions and, (iv) undertaking investment activities in a manner that best contributes to consumer satisfaction, environmental protection, industrial harmony, gender balance and development of human resources.

Prior to commencing the implementation of the proposed project, the Management of the Consolidated Hotels and Investment Limited has shown commitment to complying with the NCAA investment policies and guidelines and particularly the Private Concession Policy, Strategy and Procedures (2019-2024). Most of the business guidelines developed by the NCAA are consistent with the requirements provided in the Investment Promotion Policy, 1996. Commitment of the prospective investor to complying with the guidelines prepared by the NCAA proves how the Proponent is ready to conform with all other relevant provisions stipulated in the Investment Promotion Policy, 1996 during all phases of the project implementation.

3.2.7. The National Trade Policy, 2003

The goal of the National Trade Policy, 2003 is to facilitate smooth integration into the Multilateral Trading System (MTS) and reduce marginalization among Tanzania citizens. The Policy intends to ensure that broad-minded people acquire significant, recognizable and considerable benefits. The main objective of this Policy is to raise efficiency, widen linkages in domestic production and build a diversified competition in export sector as a means of stimulating higher rates of growth and development. The proposed development is expected to contribute immensely to the highly needed foreign currency earnings in Tanzania, which tallies well with the National Trade Policy, 2003 that emphasizes on the private sector to engage in businesses that build a diversified competition in export segment towards playing a role in the country's economic growth.

3.2.8. The National Land Policy, 1995

The key idea of the National Land Policy, 1995 is the conversion of land into an economic asset to which all Tanzania citizens should have equal access. The implication of this outlook is that, vast economic possibilities will be opened to the masses of the rural people, as there is enough land for every citizen capable of managing and deploying it to productive uses. However, the Policy provides that land will be allocated commensurate to the designated use and according to investors' ability to develop it without compromising the interests of citizens over their land. Over 30 years of operating the Ngorongoro Sopa Lodge, the Consolidated Tourist and Hotels Investment Limited has proven its ability operate a high-end accommodation facility. The modernization and extension of the Ngorongoro Sopa Lodge will indisputably improve the productive use of land within the NCA and therefore uphold the interest of the Government of Tanzania and her citizens. Subsequently, the Company commissioned an EIA study to identify

activities, which should be conducted at the site and neighbouring areas without seriously interfering with the interests of natural and cultural resources conservation, human livelihoods and the security of the NCA.

3.2.9. The National Water Policy, 2002

The aim of the National Water Policy, 2002 is to develop a comprehensive framework for sustainable development and management of the nation's water resource and putting in place an effective legal and institutional framework for its implementation. The Policy notes the imminent danger of facing water scarcity in few years to come. According to the Policy, the annual average water availability per capita was projected to decline by 45% from 2,700 cubic meters per person in 2002 when the Policy was developed to about 1,500 in 2021. However, due to measures, which are continuously taken the Government and other stakeholders, in 2021 water per capita was reported to be 2,250 litres, which was fairly higher than what was projected in 2002.

Since the Policy recognizes the fundamental but intricate linkages between water and the socio-economic development including environmental requirements and because the Proponent is aware of the Policy needs; in addition to conducting a survey that confirmed prospects for obtaining adequate underground water for both reconstruction, construction and operation of the renovated and expanded facility, the Consolidated Tourist and Hotels Limited will replace the existing soak away pits' wastewater disposal system to bio-digester and the subsequent water recycling, which will reduce clean water utilization by almost 50%. Other measures will include the installation of water-saving devices in toilets, washbasins and bathrooms; re-using bedsheets and towels on request for guests with extended stay at the Lodge; harvesting rain water and application of drip instead of sprinkler irrigation system to the lawn and flowers.

3.2.10. The National Rural Development Policy, 1996

The National Rural Development Policy (NRDP) augments the National Development Vision (2025) and serves to lay down the parameters for the Rural Development Strategy (RDS). Both the NRDP and RDS strive to improve the well-being of rural dwellers with a view to eradicating poverty. An important provision in this Policy relevant to the Ngorongoro Sopa Lodge states that *"for the planning of development projects, the government shall ensure sustainable and profitable utilisation of natural resources for the benefit of rural people by involving local communities in the management and utilisation of these resources"*.

The RDP focuses on four key issues namely, promotion of widely shared economic growth; increasing opportunities and access to social and economic services; reducing risks and vulnerability; and enhancing good governance. The significant tactics to ensure inclusion of the local people in the management of the Ngorongoro Sopa Lodge and subsequently obtain benefits from its presence will be employment, and training individuals from the local community on guiding and provision of interpretative services. The local people will also be encouraged and supported to produce goods and services of the requisite quality and standards for supply to the Lodge as well as providing conducive environment for neighbouring community to share their culture and specifically traditional dances with guests either at the Lodge or at designated cultural bomas.

3.2.11. The National Construction Industry Policy, 2002

The intensive facelift with plans to establish new presidential suites and associated facilities at the Ngorongoro Sopa Lodge obligates the Consolidated Tourist and Hotels Investment Limited to comply with the National Construction Industry Policy, 2002. Among the major objectives of the Policy, which are related to the current project are, application of cost-effective and innovative technologies; promotion of practices that sustain socio-economic development activities; and assurance on the use of practices, technologies and products, which are not harmful to both the environment and human health and safety. In order to comply with this Policy requirement, the use of building materials both natural and imported that blend with the environment will be a priority in order to attain opposing characteristics of permanence and temporary set up.

3.2.12. The National Employment Policy, 2008

According to the National Employment Policy, 2008, employment in Tanzania falls into two main categories namely, wage and self-employments. In both categories, employment is defined as any acceptable activity in which a workforce is actively engaged. Such an activity yields payment in one way or another, which accrues to a worker as an income required to meet his/her basic needs. In view of that, the National Employment Policy, 2008 directs for effective ways and means of utilising available human resource with the ultimate objective of combating poverty. Further, the Policy sets a venue for inculcating people into the culture of self-reliance through diligent and hard work.

The Consolidated Tourist and Hotels Investment Limited has for many years created employment opportunities for the people from within the NCA, the relatively closer villages in Karatu District and other Tanzanians in general. Majority of the workforce engaged in renovation of the guest houses and most of them will also be employed for re-construction of the demolished structures and construction of the proposed new components come from within Ngorongoro and the neighbouring Karatu districts. Recruitment of staff during operation will give priority to individuals who were employed at the Lodge before it was closed down and others from neighbouring communities. For specialized positions priority will be given to Tanzania citizens.

Likewise, prospects for supplying foodstuffs, guiding and provision of interpretative services particularly during evening walks will also create chances for self-employment. With permission from the NCAA, opportunities will also be available for the neighbouring people to interact with visitors particularly prospects for showing their culture and selling handcraft at the Lodge either directly or through the Proponent.

3.2.13. The National Policy on Gender and Equality, 1999

The key objective of the Policy on Gender and Equality, 1999 is to provide guidelines that will ensure the development of gender sensitive plans and strategies in all sectors and institutions. While the Policy aims at establishing strategies to eradicate poverty, it puts more emphasis on gender equality and equal opportunity of both men and women to participate in development activities and to value the role-played by each member of the society. The Company therefore, endeavours to ensuring equal involvement and opportunity in employment for both masculine and feminine gender in its operations. The aim is to have a balanced gender but since majority of females has traditionally runaway from opportunities available in remote areas, the qualified

ones will be encouraged and supported to apply for available positions to ensure the account for at least 20% of all the permanent employees.

3.2.14. The National Women and Gender Development Policy, 2000

The purpose of the National Women and Gender Development Policy, 2000 is to make sure that the gender stance is mainstreamed into all policies, programmes and strategies in the country. In order to realize this objective, gender focal points were established in ministries, independent government departments as well as regional and local authorities. Responsibility of gender focal points is to mainstream in their respective plans and programmes and working with the National machinery in-charge for coordinating gender development.

Accordingly, the National Strategy for Gender Development (NSGD) was established to provide guidance on interventions to be made and to identify roles of various players and stakeholders. The strategy also proposes coordination mechanisms that aim at facilitating the participation of different actors and how they may create necessary linkages. Due to the fact that, the Consolidated Tourist and Hotels Investment Limited has long experience in the hospitality industry and the Directors and Management Members of the Company are aware of this Policy, plans to mainstream gender issues in its operational guidelines have for quite a long been considered and will be sustained at the Ngorongoro Sopa Lodged.

3.2.15. The National HIV/AIDS Policy, 2001

Women and girls need extra consideration to protect them from increased vulnerability to HIV/AIDS infection in various social, cultural and economic environments as stipulated in the National Policy on HIV/AIDS, because the disease is a social, cultural and economic problem. Due to the fact that the HIV infection is mainly through heterosexual intercourse, the problem touches on private life styles of individuals, but the risk is highest among young people and especially girls. Girls and women in the current social and cultural environments in Tanzania are more vulnerable to HIV infection as they do not have much control over their sexuality.

The Policy points out that poverty increases the vulnerability of HIV infection as some women engage in high-risk sexual behaviour for survival. Good working environment and health of workers at the Ngorongoro Sopa Lodge shall be confirmed every year by OSHA including but not limited to counselling workers about HIV/AIDS pandemic and the need for voluntary testing. The Proponent shall further sign a concession agreement with the NCAA, which among other clauses it contains a Section that requires the proponent to ensure that members of staff and their families are treated fairly at the workplace and reasonable arrangement is made to guarantee effective control and prevention of Human Immuno-Virus (HIV)/Acquired Immuno-Deficiency Syndrome (AIDS) to the workers.

3.2.16. The National Health Policy, 2007

The National Health Policy, 2007 aims at improving the health status of all the people wherever they are; in urban and rural areas by reducing morbidity and raising life expectancy. Good health including physical, mental and social well-being is a major resource for economic development. The overall objective of this Policy is to improve health and well-being of all Tanzanians, with a focus to those most at risk and to encourage the health system to be more responsive to the needs of the people.

To ensure that the working environment at the modernized and expanded Ngorongoro Sopa Lodge renders good health to the workers, the Company shall provide employees with uniforms, medical services at a mini-dispensary to be located at the Lodge with a resident clinical officer and offer transport to referral centres for complicated cases to be treated in the wild. Lodge employees shall be given necessary PPE and good working environment that will moderate risk of accidents and diseases. Eventually, the good working environment and health of workers shall be testified annually by OSHA.

3.2.17. The National Economic Empowerment Policy, 2004

This Policy has nine (9) pillars and 83 strategies containing all elements required for economic empowerment of Tanzania citizens. The Policy spells out strategies that will facilitate (i) involvement of more people in the formal business; (ii) use of technology to enhance production; (iii) access to banks and acquiring qualifications for loans; (iv) acquiring entrepreneurial skills; (v) using land for business transactions because of its market value; and, (vi) enabling the people to conduct business with the government.

Further, the Policy requires each sector of the economy to keep on record, its empowerment strategies as well as monitor and supervise closely the implementation of the policy requirements. Before its closure and after re-commissioning the modernized and expanded Ngorongoro Sopa Lodge, the facility shall contribute to the implementation of this Policy by making available opportunity to Tanzania citizens with direct and indirect employment and supporting development schemes of the local communities particularly those related to eco-tourism.

3.2.18. The Occupational Health and Safety Policy, 2009

The main objectives of the Occupational Health and Safety Policy, 2009 is to reduce the number of work-related accidents and diseases at workplaces in Tanzania. The Policy requires the adoption and implementation of a culture that prevents Occupational Health and Safety hazards by the government, employers and employees. The effective prevention of work-related accidents and ill-health will have enormous social and economic benefits. These include improvement in productivity and competitiveness, and the quality of life of the working population. The effective management of many safety hazards will contribute to improved levels of public health and safety.

The operative control of hazardous substances at the workplace will also improve levels of public health and minimize environmental pollution. In view of the above, the Consolidated Tourist and Hotels Limited shall facilitate and support the OSHA to undertake training on occupational health and safety to the employees. Whereas the project and particularly the Ngorongoro Sopa Lodge is registered with the OSHA, employees will be provided with the PPE and a risk assessment will be conducted regularly during the life cycle of the project.

3.2.19. The Cultural Policy, 1997

The Cultural Policy, 1997 recognizes that protection and promotion of the country's cultural heritage is a civic responsibility and shall be supervised by the Government. Also, that, members of the public, private and public organizations shall be sensitized to participate in cultural heritage protection and join hands in making sure that the working places are provided with equipment,

materials and favourable environment to allow the public to fully participate in cultural activities. In view of the above, the issues that link culture, natural resources, the environment and development programmes have been and will continue to be emphasized at the Ngorongoro Sopa Lodge and visitors shall be reminded and encouraged to participate in cultural tourism and advertise the Tanzanian culture on one hand. On the other hand, visitors shall be advised to adhere to the provision of this Act by respecting the local people's culture and promote it.

3.2.20. The Forest Policy, 1998

The main goal of the Forest Policy, 1998 is to ensure sustainable supply of forest products and services by maintaining sufficient forest areas under effective management, and reassurance of the ecosystem stability through conservation of forest biodiversity, water catchments and soil fertility. Among the objectives of Forest Policy, 1998 are to:

- (i) Maintain environmental stability through preservation and, where necessary, restoration of the ecological balance that has been adversely disturbed by serious depletion of the forests in the country;
- (ii) Conserve the natural heritage of the country by preserving the remaining natural forests with the vast variety of flora and fauna, which represent the remarkable biological diversity and genetic resources of the country;
- (iii) Increase substantially the forest or tree cover in the country through massive planting of trees and social forestry programmes, especially on all degraded and unproductive lands; and
- (iv) Meet the requirements of fuel-wood, fodder, minor forest produce and small timber of the tribal populations.

The Consolidated Tourist and Hotels Investment Limited shall comply with the provision of the Policy by avoiding unnecessary cutting down of trees at the respective site and re-planting of indigenous species in areas where natural vegetation will be removed during construction. Selection of suitable species will be done and planting supported by the NCAA through the provision of seedling from the Authority's tree nurseries. In cooperation with the NCAA, the Lodge Management will identify all exotic plant species, which are found within the leased land including the tree nursery and remove them. To refrain from cutting down of trees for obtaining firewood for the construction team, a natural-gas portable generator shall be used for lighting and the LPG will be used for cooking.

3.2.21. The National Beekeeping Policy, 2012

The Bee-Keeping Policy, 2012 directs on appropriate beekeeping practices, maintenance of quality bee products, and protection of bee resources, bee fodder and consumers of bee products. Five main areas are addressed to move the bee-keeping sector towards the goal of sustainable development in Tanzania and the conservation and management of her natural resources. These are: -

- (i) Establishment and sustainable management of bee reserves;
- (ii) Apiary management;
- (iii) Beekeeping-based industries and products;
- (iv) Beekeeping in cross-sectoral areas;

- (v) Beekeeping for ecosystem conservation and management; and
- (vi) Institutions and human resources.

Of importance to the NCA in general, and the Ngorongoro Sopa Lodge in particular is a provision, which states that; *“formal, cross-sectoral coordination mechanism between bee-keeping and wildlife authorities will be established to improve coordination of activities under approved management plans of specific protected area”*. To take up this provision of the Policy, the Consolidated Tourist and Hotels Limited will cooperate with the NCAA, which is mandated to manage the NCA to diversify livelihood alternatives of the local people neighbouring the Lodge. This will be realized through the encouragement and support of bee-keeping activities in appropriate locations so as to improve the people’s socio-economic situation in face of deteriorating livestock production. While the formal establishment of bee reserves will also be an important strategy to alleviate poverty and increase food security among communities neighbouring the Ngorongoro Sopa Lodge, the bee reserves will further enhance habitat conservation.

3.2.22. The National Livestock Policy, 2010

The National Livestock Policy takes cognisance of the importance of conservation of natural resources and environment. This is clearly indicated in one of its objectives, which states that, *“to balance the optimal use and conservation of natural resources i.e., land, soils, water and vegetation so as to conserve the environment”*. This Policy statement has great implications to the NCA where livestock production and natural resources are the major land uses. Although no homesteads are located closer to the Ngorongoro Sopa Lodge and grazing in the forest where the lodge is located is not permitted, the pastoralists bring livestock in the vicinity of the facility contrary existing rules. In order to achieve the balance between the development of the Lodge and pastoralists interests, the NCAA will be requested to encourage pastoralists to use other areas for livestock grazing but assured to obtain other benefits in different forms from Ngorongoro Sopa Lodge.

3.2.23. The National Population Policy, 2006

The National Population Policy, 2002 provides guidelines that determine priorities in population and development programmes and strengthening the preparation and implementation of socio-economic development planning. The Policy objective is to coordinate and influence other policies, strategies and programmes to ensure sustainable development of the people and promote gender equality as well as empowerment of women. Like other policies, it is implemented in collaboration with various stakeholders including Non-Governmental Organizations (NGOs), the private sector, communities and development partners.

The Population Policy, the Tanzania Development Vision (2025) and other policies, which are related to population issues, need to be implemented in an integrated manner. As such, the Policy provides a good linkage between population dynamics and quality of life on one hand, and environmental protection and sustainable development on the other hand. Since human population in the NCA is increasing at great pace than the resources, which the area can offer, the implementation of the National Population Policy in the NCA, which gives a new dimension

to development programmes by ensuring that population issues are appropriately addressed shall appear on the Company's plans as an agenda.

3.3. Relevant Legislation

3.3.1. The Environmental Management Act, Cap. 191

The EMA, Cap 191, which became effective on 1st July 2005, is an umbrella law on environmental management in Tanzania. The EMA is comprehensive and provides for division of roles and mandates among actors involved in environmental activities and development projects. Amongst major purposes of the EMA are to provide legal and institutional framework for sustainable management of the environment in the country; to outline principles for management, impact and risk assessment; and to prevent pollution as well as control the negative consequences of the waste.

Others are to make certain that the public participates in the implementation of development projects and to comply with environmental quality standards and enforcement. The Act also provides the basis for implementation of international instruments on environment and implementation of the National Environmental Policy. Subjecting the ongoing renovation, modernization of some of the existing components and establishment of the proposed new presidential rooms at the Ngorongoro Sopa Lodge to the EIA study is a testimony that the investor is committed to complying with relevant provision of the Act.

3.3.2. The Wildlife Conservation Act, Cap. 283

The wildlife management in Tanzania is governed by the Wildlife Conservation Act (WCA) Cap. 283, which allows the Government to establish PAs and outlines how these reserves should be organized and managed. The NCA is one of the categories of PAs in Tanzania recognized by this Act and was established as a multiple land use area for the purpose of integrating natural resources conservation, safeguarding the interests of pastoralist living in the area and promoting tourism activities.

Generally, the Act requires the NCAA *to control entry into, and residence within the NCA, to make provision for the conservation of natural resources and development of the NCA indigenous residents living therein, and other purposes connected therewith*". The fact that the Proponent signed a concession agreement with the NCAA to renew the land lease in 2023, all relevant requirements provided in the WCA Cap. 283 are taken care by the agreement.

3.3.3. Ngorongoro Conservation Area Act, Cap. 284.

The NCAA is a fully-owned Government organization that was established by the NCA Act, Cap. 284 to conserve and develop the natural resources; safeguard and promote the interests of Maasai citizens of the United Republic engaged in cattle ranching and dairy industry within the Conservation Area and to provide and encourage the provision of facilities necessary or expedient for the promotion of tourism. Other functions as provided in the Act are, to promote and regulate the development of forestry located within the Conservation Area; promote, regulate, and facilitate transport to, from and within the NCA; construct such roads, bridges, aerodromes, buildings and fences and provide such water supplies, and carry out such other

works and activities as the Board of Directors may consider necessary for the purposes of the development or protection of the Conservation Area.

Also, do all such acts and things, as in the opinion of the Board, may be necessary to uphold and support the credit of the Authority and to obtain and justify public confidence, to avert and minimize any loss to the Authority and to do anything and enter into any transaction which, in the opinion of the Board will be calculated to facilitate the proper and efficient exercise of the Authority and its functions.

Thus, the mission of the NCAA according to its CSP (2021-2026) is to conserve the natural and historical resources and provide optimal social services to residents, staff and provision of high-quality tourism services. The Act vests the Primary responsibility of the administration and management of the NCA in the NCAA, which is overseen by the Board of Directors. One of the transactions, which the Board may enter and calculated to facilitate the proper and efficient exercise of the Authority is to grant any right, title, interest, authority, concession or licence to operate accommodation facilities or other facilities for use of visitors.

With those powers provided by the Act within the Board of Directors, the Consolidated Tourist and Hotels Investment Limited was permitted to renovate, reconstruct some lodge facilities and construct new presidential suites on a land covering 13.5 acres at the existing Ngorongoro Sopa Lodge within the NCA provided the aggregate guest beds do not exceed 220 (Appendix 1). This permit was given in accordance with the Concession Agreement that was signed between the Company and the NCAA in 2023.

The Concession Agreement prohibits among other inhibitions, any Proponent to conduct or permit the conduction of activities within the leased piece of land and surrounding areas that may interfere with, or seriously disrupt the conservation interest particularly the wild animals, and security of the NCA residents and surrounding areas. Compliance by the investor with the provisions of Concession Agreement will definitely be adhering to important clauses of the Ngorongoro Conservation Area Act, Cap. 284.

3.3.4. The Tourism Act, Cap. 65

The Tourism Act, Cap. 65 provides for institutional framework, administration, regulation, registration and licensing of tourism facilities and activities, and for related matters. Part III, section 8 of this Act prohibits all persons from conducting or operating a tourism facility or activity without registering such tourism facility or activity. Section 10(1) emphasizes further that any person who is conducting, operating or intends to conduct or operate a tourism facility or activity, which is required to be registered or graded under this Act shall apply to the Director of Tourism for a certificate of registration in the form set out in the Second Schedule of the Act. The Consolidated Tourist and Hotels Investment Limited possesses license number 016241, which is renewed every year and the current one is due for expiry on 31st December, 2024. The license allows the investor to carry on the business of tourism class "C", which is established under the business name-Ngorongoro Sopa Lodge located in the Ngorongoro Conservation and graded as a 5-star lodge (Appendix 6).

Due to the fact that the Consolidated Tourist and Hotels Investment Limited has been, and continues to comply with the provisions of the Act with regard to the existing Ngorongoro Sopa

Lodge, which started its operations in 1992, it is definitely that the same temperament will endure after modernizing and expanding the facility. Relevant to environmental conservation, the Act provides that the Director shall, in determining the matter under sub-section (3), ensure that the provisions of the EMA relating to the EIA have been complied with. This EIA was therefore commissioned to abide to the provision of the Tourism Act among other laws, which requires the undertaking of the EIA of any tourist facility.

3.3.5. The Land Act, Cap. 113

For the purpose of land management under this Act and all other laws applicable to the land, the Land Act, Cap. 113 recognizes three categories namely; public, village and reserved land where the President may transfer or exchange land from one category to another. Reserved land is divided into different groups among them are the forests, which are protected under the Forest Act, Cap. 323; NCA under NCA Act, Cap. 284, the National Parks under National Parks Act, Cap. 282 and all Game Reserves and Game Controlled Areas under the Wildlife Conservation Act Cap. 283.

The Land Act, Cap. 113 specifies that subject to the provisions of the Act, the holder of a granted right of occupancy; for the case of this project being the NCAA, may lease that right of occupancy or part of it to any person for definite period or for the life of the lessor or the lessee or for a period, which though indefinite may be terminated by the lessor or lessee, and subject to any conditions, which may be required by this Act or any other law applicable to leases or which he may think fit. To comply with the requirements of this Act, a concession agreement, which contains clauses that are commensurate with some provisions in the Land Act was signed between the lessor and lessee regarding the administration of the respective 16.4-acre piece of land where the currently developed and undeveloped sites are located.

3.3.6. The Village Land Act, Cap. 114

The Village Land Act is perhaps one amongst the laws that most directly impact the well-being of most Tanzanians. The Act advocates for the major parts of administration of land in the country to be decentralized to villages and guarantees firm administrative set up to protect small-holder security of tenure. Fundamentally, the Act vests all village land in the Village Authority. The fact that the NCA falls under the reserved land category and because some villages in the NCA possess only registration numbers without physical boundaries demarcation, while others have no registration numbers at all, implies that under the current multiple land use management of the NCA, which villagers in the area have no right of land ownership, the Proponent will work closely with the NCAA to put in place a mechanism that will ensure that only the local people who are entitled to benefit from the development do benefit to enable the facility become managed without critical conflicts.

3.3.7. The Forest Act, Cap 323

The Forest Act, Cap. 323 provides for the Management of forests, to repeal certain law relating to forests and for related matters. The project is located in the water catchment forest where according the NCAA-MZP (2021-2026) no any developments are allowed. Nonetheless, the Ngorongoro Sopa Lodge was established in 1992 when the first NCAA-General Management Plan (1996-2006), which delineated the forest as a core conservation area was not prepared yet

and the EMA, Cap.191 was also not in place. To comply with EMA, Cap. 191 and the Lodge was subjected to an initial environmental audit in 2015.

Further, the Lease Agreement was renewed in 2023 and signed between the NCAA and the investor. This EIA was therefore commissioned to identify the significant impacts of the Lodge to this catchment forest and recommend possible mitigation measures for the purpose its appropriate preservation because it is noteworthy habitat for wild animals as well as a source of water for the neighbouring agricultural communities in Karatu District, ground water forest in the Lake Manyara National Park and the ecology of the Ngorongoro Crater.

The Act requires that any proposed development in a forest reserve, private forest or sensitive forest area including watersheds to which section 18(1) applies, whether that development is proposed by, or is to be implemented by a person or organization in the public or private sector, the proposer of the development has to prepare and submit to the Director of Forestry an EIA report and an EIA certificate. The Forest Act stipulates further that, notwithstanding any other law to the contrary, no development to which section 18(1) of the Act applies, will commence unless and until an EIA has been completed to the satisfaction of the Director.

Despite that the Ngorongoro Sopa Lodge was in place before the enactment of the EMA, Cap.191 and in 2015 and the facility was subjected to an initial environmental audit, the fact that the Lodge is being upgraded, the current EIA study has been conducted by Registered and Practicing EIA experts with the NEMC to compliance with the Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021. In view of the above, the EIA report will be submitted to the NEMC for transmission to the Minister responsible for Environment for approval. Subsequently, a copy of an EIA report and a certificate of the proposed facility will be submitted to the Conservation Commissioner of the NCA to whom the water catchment forest falls under his jurisdiction for his satisfaction and follow up the implementation of the ESMP and the EMP.

3.3.8. The Antiquities Act, Cap. 333

The Antiquities Act, Cap. 333 provides for the preservation and protection of sites and articles of paleontological, archaeological, historical and cultural interest and for related matters. Section 3(1) stipulates that the Minister may declare any place to be a “monument” under this legislation. Section 5(1) subject to provisions of subsection (2) of the Act states that “no person whether beneficially or not, shall permit any animal under his control to damage a Monument or to enter any part of a Monument fenced by, or on behalf of the Director of Antiquities” or in relation to any monument or protected object declared as such by the Minister under section 3 or included in the list published by the Director under section 2(c).

Further, such acts shall not be done to any other place, site or structure, which the Minister knows or has reasonable cause to believe to be monument. While the Olduvai Gorge and the Footprints at Alaitole footprints are the only paleontological and archaeological resources currently declared to be monuments in the NCA under this Act, in case of any discovery of relic, monument or any object during implementation of the proposed upgrading of the Ngorongoro Sopa Lodge, the discovered relic will be reported to an Administrative Officer, the Director of Antiquities, the Conservator or the Curator of the Museum to comply with Section 10 of the Act.

3.3.9. The Bee-keeping Act, Cap 223

This Act provides for the orderly conduct of beekeeping, for the improvement of products of beekeeping and for the prevention and eradication of diseases and pests among bees. It also promotes, and enhances the contribution of the beekeeping sector to the sustainable development in Tanzania and the conservation and management of her natural resources for the benefit of the present and future generations as per section 3 (1) (a)-(f). Further, the Act aims at improving biodiversity and increase employment and foreign exchange earnings through sustainable bee products-based industrial development and trade. One of the occupations, which the Consolidated Tourist and Hotels Investment Limited may support and encourage the NCA residents and neighbouring community in Karatu District to engage in, for the purpose of enhancing food production and income as partial benefits to be delivered from the presence of the facility without compromising conservation importance, is bee-keeping.

3.3.10. The Water Resources Management Act, Cap. 331

The Water Resources Management Act, Cap 331 was enacted to control and protect water resources in the country. The legislation defines water as all water flowing on surface or contained or flowing in, or from a spring or stream or natural lake, swamp or in, or beneath a watercourse. The Act puts in place a regime of water rights to govern access to water use. This law was enacted to provide for institutional and legal framework for sustainable management and development of water resources and to outline principles for water resource management.

The Act also provides that pollution control norms are embodied in the water rights. In order to comply with the requirements of water conservation in the country according to the Water Resources Management Act, Cap 331, the Proponent shall extract water from a borehole that shall be drilled before commencing the construction works. Quality analysis of water from the borehole to determine its suitability for human consumption shall be conducted and thereafter a water use right permit will be sought from the Internal Drainage Basin Water Board as the Water Resources Management Act, Cap 331 directs. In order to refrain from water overutilization from the borehole that might compel the Lodge to use surface water, which should be left for the ecosystem services, various water-saving mechanism including water recycling, installation of water-saving devices in toilets, washbasins and bathrooms, re-using bedsheets and towels on request for guests with extended stay at the Lodge, harvesting rain water and application of drip instead of sprinkler irrigation system to the lawn and flowers have been proposed in this EIS.

3.3.11. The Land Use Planning Act, Cap. 116

Basically, the Land Use Planning Act, Cap 116 requires land uses to be organized in a planned fashion, with certain approvals from respective government authorities. Among other issues, the Act requires all land in the country to be used for the benefit of the people referred to as "beneficial use"; meaning the use of land that is conducive to public health, welfare and safety. Section 45(1) specifies that any approved plan shall apply to the area or zone to which it relates. It stipulates further that every person, agency or relevant planning authority shall comply with the requirements of the approved plan. Section 47 of the Act spells out that any landholder or occupier of land shall take all steps necessary to ensure voluntary compliance with aspects of an approved plan that are relevant to activities carried out on the land one holds or occupies.

Activities and actions to be conducted within a 16.4-acre piece of land, which is leased to the Proponent of the Ngorongoro Sopa Lodge for a period of 33 years shall comply with the limits of acceptable use as provided in the Lease Agreement that was signed between the NCAA and the investor as directed by Conservation Commissioner of the NCAA (Appendix 1). The Lease Agreement recognizes that the business will benefit the country and its people without compromising the laws of the country including the Land Use Planning Act, Cap. 116.

3.3.12. The Animal Diseases Act Cap. 156

This Act gives provisions for control and prevention of animal diseases, monitoring production of animal products, disposal of animal carcasses and other related matters. It also provides measures for checking livestock diseases and diseases of animals other than livestock. In a manner prescribed by the regulations, the Animal Diseases Act provides for institution of quarantine of a place or area for animals other than livestock that are deemed to be potentially infected with a recognisable disease.

As a measure of preventing the spread of diseases, the Act provides for establishment of barriers whereby Section 9(1) stipulates that no person shall herd or graze animals within two hundred meters of a public road unless there is a barrier between the public road and the area of herding or grazing. Since livestock keeping in the NCA is a back-borne of the local people's economy and no barriers are erected in the area, the Proponent will cooperate with the NCAA to control livestock entry into the Lodge premises and enforce a Section in the Act, which prohibits livestock grazing within 200 meters from the public road which in this case is the View Point-Empakaai, which known as Fosbrooke road to among other benefits this action will prevent workers and guests from the risk of contracting Zoonotic diseases.

3.3.13. The Grazing-land and Animal Feed Resources Act, Cap. 180

The Act provides for the development and management which, shall safeguard and develop grazing-lands. It also provides for management of communal and strategic grazing-land. Section 16 (1) provides for grazing-lands that shall be demarcated or delineated in accordance with the provisions of the Village Land Act and the Land Use Planning Act. Section 16(2) imposes the Village Council to grant the right of way for stock-driving for purposes of providing access to water, dipping, marketing facilities and other services, which are not within the grazing-land.

The Village Council is empowered by the Act to set aside part of the communal village land to be a strategic grazing-land in accordance with the provisions of the land use planning Act. Section 19(1) imposes power to the local government authorities to prepare grazing-land inventory trend condition and land use planning for sustainable grazing-land productivity. Section 37 of the Act, empowers the local government authority to make by-laws for soil conservation, prevention of adverse effects to soil and soil erosion in a grazing-land, rehabilitation, protection or improvement of the grazing land.

Although it may be difficult to comply with this Act where the NCA falls under the reserved land category but with settlement, which are labelled to be villages that possess only registration numbers without physical boundaries demarcation and others have no registration at all, the ongoing reformation and harmonisation of sectoral policies and legal integration in the NCA,

which the Government is currently doing will be complied with by the investor, so as to optimize benefits from the operation of the Ngorongoro Sopa Lodge.

3.3.14. The Local Government (District Authorities) Act, Cap. 287

The Act provides for; inter alia, the establishment, composition, functions and legislative powers of district and township councils and village authorities. The Act establishes environmental management responsibilities in the districts that monitor social and economic development activities in the local authority's jurisdiction areas to ensure they do not negatively affect the environment in respective project development areas through by-products such as solid and liquid waste generated from the activities. The Act insists that solid and liquid wastes have to be managed with respect to the recommended procedures governing their storage and disposal in the respective areas to protect the environment and safeguard the community's health.

Further, the Act gives authority to districts to control extraction of building minerals such as stones, sand, clay and lime and subject to the provisions of the Act or any other written law to establish, preserve, maintain, improve and regulate the use of forests and forest products. Sand and stones for construction of the proposed project will come from villages in the neighboring Karatu and Monduli districts. The use of timber will be minimized and will be purchased from government timber licensed dealers from either Karatu Township or Arusha city. All these plans aim at complying with the Local Government (District Authorities) Act, Cap 287 particularly to ensuring that project activities do not impair the integrity of the environment where natural building materials will be sourced from.

Solid and liquid waste from the project development will be managed with respect to the Ngorongoro District Council by-laws. Non-biodegradable solid waste has been and will continue to be sorted according to type and kept temporarily in appropriate containers at the Lodge thereafter hauled to Muriet landfill in Arusha city. The Consolidated Tourist and Hotels Investment Limited possesses a permit for solid disposal at the site, which was issued by the City Director through letter with reference number MA.155/411/24 of 21/07/2022 that is issued every financial year (Appendix 7). Haulage of the waste shall be conducted by a licensed waste transporter and dumping fee shall be paid to the Council commensurate to the council's by-laws.

Liquid waste shall be managed with respect to the feasible and effective sanitary system of managing liquid waste in the NCA. This will involve the purification of wastewater in the bio-digester septic tanks and thereafter recycle the cleansed water for non-human consumption activities.

3.3.15. The Companies Act, Cap. 212

The Companies Act, Cap 212 spells out that any two or more persons associated for any lawful purpose may, by subscribing their names to a memorandum of association and otherwise complying with the requirements of this Act in respect of registration, form an incorporated company, with or without limited liability. The Act stipulates further that the memorandum of every company, which should be printed in English language, shall contain the name of the company with "limited company" as last words of the name in the case of a public or with "limited" in the case of a company limited by shares or guarantee. A certificate of incorporation given by the Registrar of Companies in respect of any association shall be conclusive evidence that all

the requirements of this Act in respect of registration and of matters precedent and incidental thereto have been complied with, and that the association is a company authorized to be registered and duly registered under this Act.

The Consolidated Tourist and Hotels Investment Limited was incorporated under the Companies Act, Cap. 212, Section 15 on 23rd March, 1988 with certificate number 14992 to provide hospitality services and generally to conduct tour operations and manage accommodation facilities in the country (Appendix 3). The fact that the Company contains the word “limited” as the last name, it is a private-owned Company limited by shares, which substantiates the legality of its presence and compliance to all requirements of the Companies Act in respect of registration and of other matter precedent and incidental thereto.

3.3.16. The Business Activities Registration Act, Cap. 208

The Business Activities Registration Act Cap. 208 provides for the establishment of business activities registration system, business registration centres and for matters related thereto, which apply only in Mainland Tanzania. Section 7(1) stipulates that there shall be established in each local authority a Business Registration Centre, which according to Section 7(2), the Centre shall be a section of the local authority. According to Section 11(1), it shall be necessary for every business to obtain a certificate of registration from the Business Registration Centre and Section 11(5) emphasizes that a person shall not carry-on business at two or more premises for the business to which the certificate was granted unless particulars of both premises are registered.

While Section 15 provides that every business registration shall be valid for the entire life of the business, Section 17 stipulates that every person who is issued with a certificate of registration shall exhibit the same in a manner conspicuous place in the business premises where the business is carried on. To comply with the provisions of this Act, the Consolidated Tourist and Hotels Investment Limited possesses a business license from the Ngorongoro District Council, which is the respective Business Registration Centre and it is conspicuously displayed to Ngorongoro Sopa Lodge.

3.3.17. The Income Tax Act, Cap. 332

Section (4) of the Income Tax Act, Cap 332 stipulates that Income Tax shall be charged and payable for each year of income in accordance with the procedures specified in Part VII of the Act by every person (a) who has a total income for the year of income or is a corporation, which has a perpetual unrelieved loss determined under Section 19 for the year of income and previous two consecutive years of income attributable to tax incentives or, (b) who has domestic permanent establishment that has repatriated income for the year of income or, (c) receives a final withholding payment during the year of income.

With reference to Section 4 (a) above, Section 19 directs that for the purpose of calculating the income of a person (other than a partnership or a foreign permanent establishment) for a year of income from a business or investment, there shall be deducted, (a) any unrelieved loss of the year of income of the person from any other business or investment (b) any unrelieved loss of a previous year of income of the person from any business or investment.

Tax payable as referred in Part VII of this Act is specifically defined in Section 78(1) as (a) income tax imposed under Section 4(1) including amounts payable by a withholding agent under Division II, by an instalment payer under Division III and, on assessment under Division IV of Part VII (b) interest and penalties imposed by assessment Division I of Part VIII (c) an amount required to be paid to the Commissioner in collection from tax debtor under Section 112(9) or 128(3) and, (d) an amount required to be paid to the Commissioner in respect of tax liability of third party under Section 115(2) or 116 (3) or 116(4) or 117(2) or 118(1) or 118 (3).

The Consolidated Tourist and Hotels Investment Limited contains a TIN:- 100-169-487 of 26th July, 2013 (Appendix 4), which recognizes the Company as tax payer. The Company, which is recognized as a taxpayer for payment of the Value-Added Tax (VAT) with registration number 11-006046P was certified that it complies with taxpayer laws and was granted with a tax clearance certificate number 401-0202-1358 of 27th April, 2024 due for expiry on 31st December, 2024 by the Commissioner for Domestic Revenue with respect to short term accommodation activities (Appendix 5).

3.3.18. The Standard Act, Cap. 130

The Standard Act, Cap. 130 provides for the promotion of the standardization of specifications and services and re-establishment of the Tanzania Bureau of Standards (TBS) as well as providing better provisions of the functions, management and control of the Bureau.

Under this Act, the TBS was established as a Body Corporate and makes provisions with respect to the publication and enforcement of standards in Tanzania. The Act provides for responsibilities of the Bureau, which among others shall be to undertake measures for quality control of commodities and services; promote standardization in industry and trade; assist industries in setting up and enforcing quality assurance; developmental of management systems and procedures; and issuing National Standards and approving the use of standard marks.

Section 4(2) puts conditions that, in the performance of its functions, the Bureau shall (a) have regard to the health, safety, environment and general welfare of the people of the United Republic and, (b) maintain, as far as may be practicable, a system of consultation and co-operation with anybody established by, or under any written law and having functions similar to those specified in subsection 4(1) or having functions relating to industrial or commercial standards generally. Section 4(3) proclaims that notwithstanding the existence of any other standard, the standards declared by the Minister responsible for Industry and Trade shall prevail over any other existing standards.

Whereas the Consolidated Tourist and Hotels Investment Limited commits itself to co-operate very closely with all Government institutions to ensuring that all requirements for upgrading and later on the operation of the Ngorongoro Sopa Lodge are complied with, the Proponent is aware that the standards declared by the Minister responsible for Industry and Trade prevail over any other existing standards.

3.3.19. The Employment and Labour Relations Act, Cap. 366

The Employment and Labour Relations Act, Cap. 366 makes provisions for core labour rights; establishes basic employment standards and provides a framework for collective bargaining, the

prevention and settlement of disputes as well as for related matters. The Act applies to all employees including those in the public service of the Government of Tanzania in the Mainland excluding members, whether temporary or permanent in service of the Tanzania People's Defence Force, the Police Force, the Prison Service and the National Service.

The principal objectives of the Act are: to promote economic development through efficient productivity and social justice; to provide the legal framework for effective and fair employment relations and minimum standards regarding conditions of work; and to provide a framework for voluntary collective bargaining. Others are; to regulate the resort to industrial action as a means to resolve disputes; to provide a framework for resolution of disputes by mediation, arbitration and adjunction; and generally, to give effect to the core conventions of the International Labour Organization as well as other ratified conventions.

Further, Section 5 of this Act prohibits child labour of under 14-year-old and restricts labour of 14- to 18-year-old to light work, which is not harmful to the child health or development or prevents the child's school attendance. It also allows for participation in vocational orientation or training programmes approved by the concerned Authority. The same section prohibits labour to less than 18-year-old in mines, factories, ships or any other work sites including non-formal settings or agriculture, where conditions can be considered hazardous for the child. Sub-section 7(1) provides for employers to ensure the promotion of equal opportunities and elimination of discrimination in employment practices.

Since the investor of the Ngorongoro Sopa Lodge is aware of the provisions specified in the Employment and Labour Relations Act, the Company as a whole will comply with the requirements provided including refraining from employing individuals under the age of 18 years old and ensuring that recruitment procedures are based on qualifications, experience and skills and therefore no discrimination of whatsoever kind shall be exercised during recruitment and operation of the proposed facility.

3.3.20. The HIV and AIDS (Prevention and Control) Act, Cap. 431

The HIV and AIDS (Prevention and Control) Act, Cap. 431 is a law that was enacted to provide for prevention, treatment, care, support and control of HIV and AIDS; to provide appropriate treatment, care and support using available resources to people living with, or at risk of contracting HIV and AIDS; and to provide for related matters. Section 4(1) stipulates that; every person, institution and organization living, registered or operating in Tanzania shall be, under the general duty to:

- (i) Promote public awareness on causes, modes of transmission, consequences, prevention and control of HIV and AIDS;
- (ii) Reduce (a) the spread of HIV and AIDS, (b) prevalence of Sexually -Transmitted Infections (STIs) in the population; and, (c) adverse effect of HIV and AIDS;
- (iii) Protect rights of the orphans by: (a) providing health care and social services; (b) prohibiting compulsory HIV testing unless provided for, in this Act; and, (c) fighting stigma and discrimination;
- (iv) Discourage negative traditions and usages, which may enhance HIV and AIDS spread in the community;

- (v) Promote all traditions and usages, which may reduce the transmission and prevalence of the infection in the community; and,
- (vi) Increase access, care and support to persons living with HIV and AIDS from community or health care facilities.

Section 4(2) directs further that the Government, political, religious, traditional leaders and employers in the private sector shall:

- (i) Integrate or prioritize HIV and AIDS in their proceedings and public appearances; and,
- (ii) Advocate against stigma and discrimination of people living with HIV and AIDS.

Section 4(3) obligates every person, institution, organization, Government, political, religious, traditional leaders and employers in the private sector under subsections (1) and (2) above, to consult or liaise with the Tanzania Commission on AIDS (TACAIDS) for the purpose of ensuring that resources are evenly distributed within Tanzania in order to:

- (i) Avoid concentration of such resources in one geographical area; and,
- (ii) Initiate pre-informed activities intended to prevent and control HIV and AIDS.

The Consolidated Tourist and Hotels Investment Limited will employ about 80 workers during reconstruction and construction of new structures and almost 180 when the Lodge will be re-commissioned. The Company will also accommodate a maximum of 40 tourist driver guides during high tourist season. In view of that, the HIV and AIDS (Prevention and Control) Act, Cap. 431 becomes relevant to the Company because the provision of awareness on causes, modes of transmission, consequences, prevention and control of the HIV and the AIDS to this segment of the public is essential and mandatory throughout the whole life cycle of the project implementation.

3.3.21. The National Social Security Fund Act, Cap. 222

The National Social Security Fund Act, Cap. 222 was enacted to provide for the establishment of a National Social Security Fund; its membership; the payment of contribution to, and the payment of benefits out of the Fund, and for other purposes connected therewith. Subsection 7(1) stipulates that the Minister may, by a statutory order (a) specify any class or description of eligible employees as persons who shall be registered as members of the Fund, and (b) specify any class or description of employers as persons who shall be registered as contributing employers.

Subsection 7(2) elucidates that when the Minister has made any order under Subsection 7(1), any person to whom the order applies shall register to the Fund in the prescribed manner, and any employer of a class or description specified in the order as contributing employer, whether that employer is registered or not, shall be subject to the same extent to those provisions of this Act, which apply to a registered contributing employer.

Subsection 7(5) of the Act compels any employer of a class or description specified in an order made under Subsection 7(1)(b), whenever applying for a business licence to produce a

clearance certificate of up to-date payment of due contributions issued by the Managing Director. The Consolidated Tourist and Hotels Investment Limited is aware of the requirements of the National Social Security Fund and it complies with relevant provisions of the Act in its operation of the existing employees of the facilities it operates across the Country including the Ngorongoro Sopa Lodge.

3.3.22. The Occupational Health and Safety Act, Cap. 297

The Occupational Health and Safety Act, Cap 297 makes provisions for safety, health and welfare of persons at work in factories and all other places of work. It also provides for the protection of persons other than persons at work against hazards to safety and health arising out of, or in connection with activities of the persons at work. Relevant provisions of the Act to the Ngorongoro Sopa Lodge, which is currently under renovation and will follow reconstruction of the demolished main house, and construction of the proposed new presidential suites and associated amenities are stipulated in Part IV, section 43(1), which are concerned with safe means of access, safe working place and protection of fire as well as part V, which provides for health and welfare of people at work places.

As recommended in the ESMP of this EIS, all provisions in this Act regarding occupational safety and health shall be complied with by the proponent, which will be particular to the provision and enforcement of use of the PPE both during construction and operation to as provided in the Company's emergency preparedness and response plan (Appendix 11) and placing precaution signs in areas of high risks such as wild animals and potential for fire occurrence to ensure safety to employees and others than persons at work.

3.3.23. The Public Health Act, Cap. 99

The Public Health Act, Cap. 99 provides for the promotion, preservation and maintenance of public health with a view to ensuring the offering of comprehensive, functional and sustainable public health services to the general public and to provide for other related matters. Section 75 of the Act requires for separation at source of different kinds of garbage and gives standards to guide the type, size, shape, colour and other specifications for containers with the aim of ensuring proper management of both solid and liquid waste, which is one among other causal agents of poor human health.

Whereas Section 82 directs on how gaseous waste should be handled, sorting of waste in different types and disposing them temporarily using different containers and thereafter transporting and dumping the same outside the NCA using a hired waste transporter who is registered and licensed to undertake such excises shall be a normal procedure to be employed at the Ngorongoro Sopa Lodge during renovation, reconstruction, construction and operation phases of the project. Good working environment and health of workers will be testified annually by OSHA, and safety of workers and other users of the facility particularly with regard to fire risks shall be complied with the Emergency Preparedness and Response Plan of the Lodge (Appendix 11).

3.3.24. The Fire and Rescue Force Act, Cap. 427

The Fire and Rescue Force Act, Cap. 427 provides for better organization, administration, discipline and operation of fire and rescue brigade services. The Act stipulates that if the

Commissioner responsible for fire and rescue services is satisfied that there exists in any premises of any fire hazard, he may serve a fire hazard abatement notice in the prescribed form requiring the concerned person to abate within the period specified in the notice. Such a notice may be served to either (a) a person who by any reason or whose act, default or sufferance the fire hazard arose or continues, or (b) if such a person or such other person is the servant or agent of some other person, or (c) if such a person or such other person, the case may be, cannot readily be found or is absent from the United Republic upon the occupier or the owner of the premises in which such fire hazard exists.

This Act is relevant to the Ngorongoro Sopa Lodge because fire sources could be from the LPG, the LNG, electric faults or wild fires that may propagate into the premises and become a disaster to the property and sometimes claim lives of employees and/or guests. Since the Proponent is aware of this Act, he has prepared an Emergency Preparedness and Response Plan (Appendix 10), which directs for precaution measures for fire occurrence or actions to be taken in case of fire occurrence. This includes among others, the placement of red-coloured fire extinguishers and the buckets filled with sand at strategic positions and establishment and maintenance of a fire break around the perimeter of the Lodge premises.

The proponent is however, ready to cooperate once notice to fire abatement is served by the Commissioner responsible for fire and rescue in case, he becomes satisfied that there exists in the Lodge premises any fire hazard. This is the reason why the Proponent is obliged to submit the architectural drawings to the Fire and Rescue Force for approval before commencing reconstruction and construction and granted with a fire safety certificate by the Commissioner General after construction but prior to starting the operation, which endures for one year and thereafter renewed after inspection and satisfied for compliance.

3.3.25. The Workers Compensation Act, Cap. 263

The Workers Compensation Act, Cap. 263 was enacted to, among other objectives; (i) provide for adequate and equitable compensation of employees who suffer occupational injuries or contract occupational diseases arising out of, and in the course of their employment, and in the case of death, for their dependants; (ii) provide for the rehabilitation of employees who have suffered occupational diseases in order to assist in restoring their health, independence and participation in the society; and, (iii) promote the prevention of accidents and occupational diseases.

Sections 19-32 of this Act stipulate that where an employee gets involved in an accident-causing disablement or death, an employee or a dependant of an employee shall, subject to the provisions of this Act be entitled to compensation provided under the Act. So long as it is inevitable that employees at the proposed undertaking will either be involved in accidents, contract occupational diseases or may die during the life of the project's implementation, this Act becomes relevant to the Ngorongoro Sopa Lodge, which obliges the Proponent to understand and comply with it.

3.3.26. The Tanzania Investment Act, Cap. 38

This Act established the Tanzania Investment Centre (TIC). The TIC is described as a "one-stop centre" for investors. The general objective of this Act is coordination, encouragement,

promotion and facilitation of investment in Tanzania. The Act establishes an incentive scheme for investors making a capital investment of United States Dollar (USD) 100,000 or more. Among the functions of the Centre are, to assist all investors, including those who are not bound by the provisions of this Act, to obtain all necessary permits, licenses, approvals, consents, authorizations, registrations and other matters required by law for a person to set up and operate an investment; and to enable certificates issued by the Centre to have full effect. The estimated investment cost for renovation and upgrading the existing structures as well as construction of new proposed structures is approximately USD 16million, which entitles the Consolidated Tourist and Hotels Investment Limited for an incentive scheme as provided in this Act.

3.3.27. The Engineers Registration Act, Cap. 63

The Act regulates the engineering practice in Tanzania by registering them and monitoring their conduct. It establishes the Engineering Registration Board (ERB). The Act requires any foreign engineer to register with the ERB before practicing in the Tanzania. All engineers and, or workers, be it foreigners or Tanzanians who will be involved in upgrading and construction of new components at the Ngorongoro Sopa Lodge shall abide to the Act's requirements. A firm and its key supervisory team that will be commissioned to supervise construction activities will be the one registered by the ERB, and the proponent will scrutinize their registration certificates before allowing them to supervise the works.

3.3.28. The Contractors Registration Act, Cap. 235

The Act establishes the Contractors Registration Board (CRB). The CRB is mandated to register contractors, regulate their conduct and for related matters. Among other things, the CRB is required to take legal action against unregistered contractors who undertake construction; installation, erection or alteration works; ensure that all construction sites are hoarded; and the Labour laws including the Occupational Safety and Health Regulations in the construction industry are adhered to. On executing its construction activities, the proponent shall appoint a registered contractor who will make sure that all relevant provisions of the Act are adhered to.

3.3.29. The Architectures and Quantity Surveyors Act, Cap. 269

This Act provides for institutional machinery for the regulation of activities and conducts of architects, quantity surveyors and their firms under the Architect and Quantity Surveyors Registration Board. To comply with relevant provisions of this Act the Architect who prepared the architectural drawings for reconstruction and construction of the proposed new components at the Ngorongoro Sopa Lodge is registered with the Architect and Quantity Surveyors Registration Board. To substantiate his registration legality, all the drawings provided in this EIS consist the Architect's stamp.

3.3.30. Persons with Disabilities Act, Cap. 183

An Act to make provisions for the health care, social support, accessibility, rehabilitation, education and vocational training, communication, employment or work protection and promotion of basic rights for the persons with disabilities and to provide for related matters. The upgraded structures and the proposed new ones at the Ngorongoro Sopa Lodge are designed to provide easy access by disabled people including the ramps and flat surfaces where it is feasible. Public facilities and particularly the wash rooms will comprise of disabled facilities for

both men and women. The emergency assembling point will also be provided with easy access for disabled people.

At least one guest room in each of the accommodation category including the existing ones, the standard and the luxury suites will be designed to house persons who are physically-challenged to Comply with the Act. Employment during all phases of the project development will be made without discrimination over physical disability of the applicants and where there is a vacant post fit for a physically-challenged person and such person applies for the vacancy, the Consolidated Tourist and Hotels Investment Limited will offer employment to that person provided one meets the minimum qualification for such a post. Where disabled people will be employed at the Ngorongoro Sopa Lodge, the Company will ensure that they receive equal treatment and full entitlement without discrimination to equal protection and benefits.

3.3.31. The Tanzania Meteorological Authority Act No. 2 of 2019

An Act to establish the Tanzania Meteorological Authority, to make better provisions for the management, control, provision, coordination and regulation of meteorological services, to repeal the Meteorological Act Cap.157 and to provide for related matters. Section 14.-(1) The Authority shall regulate the meteorological services in the United Republic. Without prejudice to the generality of subsection

- The regulation of the Authority shall include:
- Approval and registration of meteorological stations;
- To ensure adherence to international standards and practices of meteorological services;
- Ensure adherence to standards in installation and maintenance of meteorological instruments; and to perform monitoring and supervisory functions over meteorological operators

Section 16.- (1) The Authority may, if satisfied that the applicant has fulfilled the conditions as provided under the Regulations, issue the permit to the applicant upon payment of the prescribed fees. (2) A permit issued under subsection (1), shall be valid for a period of one year and subject to renewal. The proponent shall consult TMA for meteorological data which shall guide the contractor during implementation of the proposed project and avoid unnecessary delay due to weather changes .

3.4. Relevant Regulations

3.4.1. The Environmental Management (Environmental Impact Assessment and Audit (Amendment) Regulations, 2024.

To support the implementation of EMA, Cap. 191, the Government prepared the Environmental Impact Assessment and Audit Regulations, 2005, which is referred to as the Principal Regulations and the amendment thereof; the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018. The Regulations outline procedures for conducting the EIA and the EA. They also describe and provide guidance regarding projects, which need the EIA study and how it should be carried out. The Regulations promulgate strongly on periodic and independent environmental assessments of which, their outcome should inform additional environmental management process.

Further, the Regulations advocate strongly for stakeholders' consultations at all stages of environmental impact study. All the above stipulations provided in these Regulations obliged the Proponent to commission this EIA study to comply with the involvement of diverse key stakeholders and collect adequate baseline information to form a basis for subsequent self-audit among other requirements.

3.4.2. The Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021

The Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021 provide for the certification and registration of environmental experts and contain rules relevant to the practice and their discipline. Objectives of these Regulations, which were published on 19th March, 2021 through the Government Notice number 267 are to:- (a) establish a system of registration and categorization of practicing environmental experts (b) provide qualifications for persons who may conduct environmental studies (c) provide a system of nurturing competence, knowledge and consistence of environmental experts in the carrying out of the EIA and the EA and, (d) provide for a Code of Conduct, discipline and control of environmental experts. These Regulations were prepared to embrace Section 83 of the EMA, Cap. 191, which directs that the EIA and the EA shall be conducted by Experts or Firms of Experts whose names and qualifications have been registered as such by the Council.

To that end, the Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021 prohibits a registered environmental expert of any category to conduct any environmental study without practicing certificate issued under these Regulations. According to Regulation 24(3), a certified environmental expert shall provide professional expertise only in the area indicated in his practicing certificate. Regulation 37(1) requires an environmental expert to comply and adhere to the Code of Conduct and Professional Ethics prescribed in the Third Schedule of these Regulations. These Regulations have been complied with because both Dr. Victor Runyoro; an Ecological Economist and Mr. Gerald X. Gisiput; an Environmentalist contain practicing certificates issued under these Regulations, which allow them to conduct the EIA in the fields of wildlife and tourism.

3.4.3. The Environmental Management (Air Quality Standards) Regulations, 2007

The objects of the Environmental Management (Air Quality Standards) Regulations, 2007 are to set baseline parameters on air quality and emissions based on a number of practical considerations and acceptable limits, enforce minimum air quality standards, help Proponents to keep abreast with environmentally-friendly technologies and to ensure protection of human health and the environment from various sources of pollution. The Regulations provide that once the National Environmental Standards Committee of the Tanzania Bureau of Standards (TBS) has set minimum air quality standards and approved by the Minister responsible for environment, every person shall be required to comply with those limits.

The Regulations provide further that if any person contravenes Sections 8(1) and 8(2), which prohibit emission of hazardous substances, chemicals, gases etc. may be ordered by the court to pay the cost of removal, in the course of restoration of the environment damaged or destroyed as a result of the discharge. Section 8(3) mandates the NEMC with general powers to ensure purposeful enforcement of the Regulations. It is from the awareness, which the Proponent

possesses with regard to air quality standards that obliged the Consolidated Tourist and Hotels Limited to commission this EIA study in order to identify technologies that will not impair the naturalness of the environment and by doing so comply with these Regulations.

3.4.4. The Environmental Management (Water Quality Standards) Regulations, 2007

The Environmental Management (Water Quality Standards) Regulations, 2007 stipulate that the National Environmental Standards Committee of the TBS shall prescribe classifications, criteria and procedure for meeting standards of water quality for approval by the Minister responsible for environment. In the course of prescribing the above, the Committee shall establish minimum quality standards for all waters of Tanzania, minimum standards for the treatment of effluent before their final discharge into public sewer system and minimum quality standards for different uses of water including drinking water and recreational purposes.

The Regulations provide that any person who knowingly puts or permits to put into any stream solid refuse, rubbish, poisonous, noxious or any other waste including liquid discharged from any factory or manufacturing process or interferes with soils and vegetation that protect water sources and/or pollutes ground water, will be committing an offence. The existing wastewater treatment system at Ngorongoro Sopa Lodge will be replaced the technology were the wastewater is treated through anaerobic oxidation process in the bio-digester septic tanks and thereafter recycled for non-human consumption activities.

This wastewater management system provides modest chances for water and soil contamination. Nonetheless, the Company commits itself to comply with these Regulations by undertaking regular monitoring and analyses of the chemical, physical and microbiological/bacteriological parameters for the water that will be extracted from a borehole to ensure that limits for quality of drinking water and other uses are complied with, as prescribed in the Fifth and Sixth Schedules of these Regulations.

3.4.5. The Environmental Management (Solid Waste Management) Regulations, (Amendment) Regulations, 2016

The Environmental Management (Solid Waste Management) (Amendment) Regulations, 2016 read together with the “Principal Regulations”; the Environmental Management (Solid Waste Management) Regulations, 2009 direct that manufacturers or any person exercising jurisdiction under the EMA Cap. 191 shall, in relation to any decision, order, exercise or any power performance of any function, be guided by (a) the precautionary (b) polluter pays and (c) the producer extended responsibility principles of the environment and sustainable development relevant to waste disposal and management.

The Regulations further require any person who owns or controls a facility or premises, which generates waste shall minimize the waste generated by adopting cleaner production principles, which include (a) improvement of production process through conserving raw materials and energy by; (i) eliminating the use of toxic raw materials within such times as may be prescribed by the Minister and (ii) reducing toxic emissions and wastes to a level prescribed in the applicable national environmental quality standards (b) Monitoring the product cycle from beginning to the end, by (i) identifying and eliminating potential negative impacts of the product (ii) enabling the recovery and re-use of the product where possible and, (iii) reclamation and recycling.

Whereas the project design for renovating, upgrading existing structures and construction of new components puts emphasis on the reduction of solid waste generation by for example production of cement blocks and paves from the rubble of the demolished structures, providing filtered water in the re-usable glass bottles during operation for the purpose of avoiding the use of plastic bottles, and adopting technology that reduces levels of energy and water utilization, all recyclable waste shall be transported to Arusha city and delivered to respective associations or retailers for recycling.

3.4.6. The Environmental Management (Hazardous Waste Control and Management) Regulations, 2021

The Environmental Management (Hazardous Waste Control and Management) Regulations, 2021 prohibits the deposition of hazardous substances such as asbestos or asbestos containing materials, explosives, fireworks, firearms, batteries, hot ashes, flammable liquid, highly flammable materials, infectious materials, (other than a pressurized container commonly containing domestic products such as fly spray, hair spray and similar materials), or radio-active materials.

Although generation of hazardous waste will be limited to batteries and used solar gadgets, which will not be produced regularly, activities at the Ngorongoro Sopa Lodge will ensure that hazardous wastes are handled carefully in case they are generated. Further, the Company shall commission a company with requisite qualifications to handle and transport hazardous waste, which will be generated at the Lodge during upgrading the existing structures, and construction of the new ones and operation.

3.4.7. The Environmental Management (Quality Standards for Control of Noise and Vibration Pollution) Regulations, 2015

The Environmental Management (Quality Standards for Control of Noise and Vibration Pollution) Regulations, 2015 were formulated under Sections 140, 147 and 230 of the EMA Cap. 191 to control noise (loud, unreasonable, unnecessary or unusual) and vibration pollution that annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and of the environment. Focus areas include: noise management by owner of machinery or occupier of a facility or premises to control noise and to install sound level meters for the measurements and monitoring sound; obtaining noise emission license issued by the Director General of the NEMC to owner or occupier of premises whose work or activity is likely to emit noise in excess of the permissible noise levels.

Other areas are compliance, protection or stop orders issued by the NEMC or any other empowered authority when any condition of any license or permit has been breached or; prevention orders and improvement notice issued by an Environmental Inspector to prevent noise and vibration pollution in an amount, concentration or manner that constitute a risk to human health or the environment. The Regulations provide a discretion to the Minister to reward any person who will report an incident of incidental, concealment or inadvertent emission or noise pollution or excessive vibration. To comply with relevant provisions of these Regulations, the Consolidated Tourist and Hotels Investment Limited will develop measures to control noise within the acceptable limits and a sound level meter shall be installed at the Lodge during

renovation, re-construction, construction and operation to measure the levels of noise and vibrations particularly from the generators and vehicles.

3.4.8. The Environmental Management (Soil Quality Standards) Regulations, 2007

The Environmental Management (Soil Quality Standards) Regulations, 2007 were prepared under Sections 144, 145 and 230 of the EMA Cap. 191 to set soil quality standards for any activity with impacts upon it. The main purpose of formulating these Regulations is to deal with matters pertaining to soil quality for sustainable development for the present and future generations. Focus areas of the Regulations, which are relevant to the Ngorongoro Sopa Lodge are:

- (i) Regulation 16, which prohibits discharge of hazardous substances, chemicals and materials or oil etc. on any soils.
- (ii) Registration and obtaining discharge permit issued by the NEMC for main polluting activity.
- (iii) Consent to discharge effluent from any commercial, industrial or other trade waste systems into soils or subsoil granted by the Council or any other designated institutions.
- (iv) Compliance, soil protection or stop orders issued by the NEMC or any other empowered authority when any condition of any license or permit has been breached or discharge of a contaminant in an amount, concentration or manner that constitutes a risk to the soils.

To comply with the Environmental Management (Soil Quality Standards) Regulations, 2007 precaution shall be taken to control undesirable spillage of liquid and particularly the oil into the environment and licensed professional for handling hazardous substances and chemicals shall be commissioned among other activities to collect, transport and dispose the same as appropriately as provided in the Regulations.

3.4.9. The Environmental Management (Prohibition of Plastic Carrier Bags and Plastic Bottle Cap Seals) Regulations, 2022

The Environmental Management (Prohibition of Plastic Carrier Bags and Plastic Bottle Cap Seals) Regulations, 2022 apply to (a) the import, export, manufacturing, sale, supply, storage and use of plastic carrier bags within Mainland Tanzania, and (b) the import, export, manufacturing, sale and use of beverages with plastic bottle cap seal.

The objectives of the Regulations are to; (a) impose a total ban on the import, export, manufacturing, sell or offer for sale and use of plastic carrier bags regardless of their thickness (b) impose a total ban on the import, export, manufacturing, sale and use of beverages with plastic bottle cap seal (c) protect human and animal health as well as the environment from likely adverse effects of utilization of plastic carrier bags or plastic bottle cap seals, and (d) provide economic and financial incentives for the production and importation of alternative carrier bags.

The Consolidated Tourist and Hotels Investment Limited shall therefore ensure that during all phases of the project development will abide to these Regulations by not using or keeping at the facility plastic carrier bags, plastic wrappings and beverages with plastic bottle cap seals prohibited by the Regulations, instead will use recommended environmentally friendly alternatives if need arises.

3.4.10. The Environmental Management (Control and Management of Electrical and Electronic Equipment Waste) Regulations, 2021

These Regulations apply to all categories of electrical and electronic equipment wastes with respect to generation, collection, storage, transportation, importation, exportation, distribution, selling, purchasing, recycling, refurbishing, assembling, dismantling and disposal of electrical and electronic equipment waste or components, and their movement into, or outside Mainland Tanzania. The general principles require any person generating, collecting, storing, transporting, treating, recycling, reusing, recovering and disposing of hazardous waste or any person exercising jurisdiction under these Regulations shall, in relation to any decision, order, exercise of any power or performance of any function, be guided by (a) precautionary principle; (b) polluter pays principle; and (c) producer extended responsibility of the environment and sustainable development relevant to e-waste management. The latter principle refers to a policy approach, which requires a person producing or importing a product to internalize environmental costs in the production of the products and in the whole life cycle of such product.

Some of the operational equipment falling in the electrical and electronic category of are often imported by authorized business people. Whereas the importers and distributors shall be responsible for compliance of provisions of the Regulations related to that segment, disposal of such waste by the Consolidated Tourist and Hotels Investment Limited shall be guided by the precautionary principle where the Company shall commission an agent with requisite qualifications to handle and transport waste from these equipment should they be generated at the Lodge.

3.4.11. The Environmental Management (Fees and Charges) (Amendment) Regulations, 2021

Regulation Four (4) of the Environmental Management (Fees and Charges) (Amendment) Regulations, 2021 requires any person who wishes to perform any activity related to the prevention, protection, promotion or conservation of environment or to carry on the business related to the EIA, the EA or the Environmental monitoring; register as environmental expert; environmental quality standards; and ozone depleting substances, to pay fees prescribed in the Schedule to these Regulations. The Consolidated Tourist and Hotels Investment Limited is progressively complying with these Regulations in relation to the different activities that are conducted at the Ngorongoro Sopa Lodge including effecting payment for registration the carrying out the current EIA study and the project review fee. The Company will pay all other relevant charges as prescribed in Environmental Management (Fees and Charges) (Amendment) Regulations, 2021 these including but not limited to the Environmental Compliance fee.

3.4.12. The Wildlife Conservation (Wildlife Corridors, Dispersal Areas, Buffer zone and Migratory Routes) Regulations, 2018

These Regulations provide directives on conservation of wild animals in wildlife corridors, dispersal areas, buffer zones and migratory routes. Regulation 3(1), which refers to the provisions of Section 22 of the Wildlife Conservation Act, Cap. 283 stipulates that wildlife

corridors, dispersal areas, buffer zones and migratory routes may be designated in areas- (a) outside national parks, the NCA, game reserves, wetland reserves and Game Controlled Areas; or (b) within village land, general land and any other land under which a right of occupancy operates.

Regulation 3(2) orders that without prejudice to sub regulation (1), an area designated for the establishment of wildlife corridors, dispersal areas, buffer zones and migratory routes shall meet the following criteria- (a) forms part of an ecologically viable ecosystem; (b) serves as a supplementary habitat to core protected areas that are unsuitable owing to climatic change; (c) loss or degradation of its habitat is a cause of decline or extinction of plants and animals in areas surrounding it; or (d) the area is prone to loss of genetic variation due to isolation.

Although the Ngorongoro Sopa Lodge where activities, which are currently being carried out, and the planned ones to be undertaken is located in the NCA where these Regulations do not provide for designation of wildlife corridors, dispersal areas, buffer zones and migratory routes, their protection status is important to be known by the Proponent to instil a sense of support when the issue of their protection comes on board. Nonetheless, since the proponent shall adhere to the NCA Act, Cap. 284 and all policies and guidelines thereof, implementation of the project's activities will not interrupt the welfare of the wildlife because the premises of the facility shall not be fenced and objects that may block free movement of animals will not be erected.

3.4.13. The Wildlife Conservation (Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Implementation) Regulations, 2018

These Regulations, which were prepared under the WCA, Cap. 283 focus on implementing the CITES in Tanzania Mainland. The Regulations include sections on management and scientific authorities; control of trade in species listed in the CITES appendices; general conditions for the issuance of permits and certificates; exemptions; and the export of live specimens. Although the business conducted at the Ngorongoro Sopa Lodge is specific to accommodation activities (Appendix 6), which these Regulations do not apply, the Company shall nonetheless join hands with other stakeholders in the NCA to fight against trade in endangered species of fauna and flora.

3.4.14. The Fire and Rescue Force (Safety Inspections and Certificates) (Amendment) Regulations, 2017

The Fire and Rescue Force (Safety Inspections and Certificate) (Amendment) Regulations, 2017, which focuses on safety inspections and issuance of compliance certificates, disclose through Regulation 1(3) that there shall be an inspection fee for each category of premises and facilities to be inspected as shall be determined by the Minister of Home Affairs. Regulation four (4) obliges the owner of premises, vehicles, vessels or any other conveyance facility to render information in respect of fire precaution to the Force during inspection.

Regulation 6(1) directs that while the application for Fire Safety Certificate is pending, the owner or operator of a premises, vehicle, vessel or any other conveyance facility shall ensure that; (a) the means of escape in case of premises, a vehicle, a vessel or any other conveyance facility, is safe and can effectively be used at all times when there are people on the premises, vehicle, vessel or any other conveyance facility (b) the means for fire-fighting with which the premises,

vehicle, vessel or any conveyance facility are provided and maintained in effective order and (c) any person employed to work in the premises, vehicle, vessel or any other conveyance facility receives instructions or training on fire precaution and management through a program approved by the Commissioner General.

To abide to the provisions of these Regulations, the Proponent will submit the architectural drawings of the proposed new components to be constructed at the Ngorongoro Sopa Lodge to the Fire and Rescue Force, to enable it inspect compliance with these Regulations. Subsequently, prior to re-opening the facility for operation, the Fire and Rescue Force shall inspect both the renovated, reconstructed and constructed structures for compliance of the Regulations before issuing a fire certificate that shall be renewed on yearly basis pursuant to Regulation 12. This Regulation stipulates that the Fire Safety Certificate shall remain valid for only one year. All workers at the Lodge will also receive training and regular instructions on fire precaution and management through a program to be approved by the Commissioner General as provided in the project's emergency preparedness and response plan (Appendix 10).

3.4.15. The Fire and Rescue Force (Precaution and Building) Regulations, 2015

Majority of the provisions in the Fire and Rescue Force (Precaution and Building) Regulations, 2015 focus on determining the design, construction, protection, location, arrangement and maintenance of facilities to provide safe means of escape for occupants from all buildings hereafter erected, altered or changed in occupancy. The areas, which are designated as means of escape and which shall not be turned into any other usage as provided in Regulation 4 (1) and (2) include; exit staircase, fire-fighting lobby, smoke stop lobby, exit passageway and escape corridors.

According to Regulation 17, all exits and access facilities shall clearly be visible or their locations clearly indicated and shall be kept readily accessible and unobstructed at all times to enable every occupant or tenant within a building to have direct access to the required exit without passing through spaces or rooms occupied by other occupants or tenants. Regulation 63 emphasizes that every exit shall be clearly indicated by exit and directional signs.

Regulation 120 prohibits passing any air ducts, sanitary pipes, gas pipes, electrical conduits or cable tray and other services that are likely to permit passage of flame or smoke in the event of a fire through a fire Command Centre, fire Pump Room, emergency Generator Room and smoke Control Fans Room, unless all these services are protected with one hour fire resistance enclosure, or separated with one hour fire resistance ceiling. Whereas Regulation 153 cautions that all walls, ceilings, roof covering and finishes shall not contain any plastic material, Regulation 154 directs that for any additions and alterations to existing buildings, non-combustible partitions shall be used for separation of areas undergoing works from occupied areas of the building.

Whilst Regulation 166 insists that where emergency generators are provided as a secondary source of supply, they shall comply with prescribed standards, Regulations 167 and 168 give direction on providing portable fire extinguishers and their conformity with specifications and operational as per requirements stipulated in the NFPA 10. At the Ngorongoro Sopa Lodge generators have been and will continue to be the primary source of energy for lighting and will comply with Regulation 166.

In addition, Regulation 169 requires portable fire extinguishers to be installed and conspicuously marked in accordance with requirements of NFPA 10 or other acceptable standards. Regulation 178 (1) demands for provision of an automatic or manual type of electrical fire alarm with a fire indicator board to indicate the location of the alarm, which has been actuated or operated, and such indication of location shall be accurate to the maximum allowed alarm group area limitations as specified in NFPA 72 or other acceptable standards.

Regulations 196-219 provide for mechanical ventilation and smoke control systems and Regulations 220-230 transact matters related with artificial lighting facilities at exit points of all types of buildings with particular reference to minimum luminance to be provided and the spacing for luminaries.

More important is the time period to lapse between the failure of electrical supply to normal lighting and the energy provision of the exit lighting, which shall not exceed one second. With little knowledge and awareness about the requirements provided in these Regulations, the Consolidated Tourist and Hotels Investment Limited shall invite the Fire and Rescue Force to inspect the Lodge premises on annual basis prior to renewal of the fire certificate. The Fire and Rescue Force will also be requested to conduct training on fire prevention and fighting techniques to all Lodge employees.

3.5. National Strategies and the NCAA Guidelines

3.5.1. The Tanzania Development Vision 2025

The Tanzania Development Vision (TDV-2025) foresees the alleviation of widespread poverty through improved socio-economic opportunities, good governance, transparency and improved public sector performance. These objectives not only deal with economic issues, but also include social challenges such as education, health, the environment and increasing involvement of the people in working for their own development. The thrust of these objectives is to attain a sustainable development of the people. The Vision articulates the desirable condition or situation that is envisaged by the Government and the people of Tanzania. It seeks to mobilize the people and resources of the nation towards achieving shared goals and attaining sustainable semi-industrialized middle market economy by year 2025. The proposed investment by the Consolidated Tourist and Hotels Investment Limited shall therefore contribute to the realization of the objectives of the TDV (2025) goals.

3.5.2. The Third Five-Year National Development Plan (2021/2022-2025/2026)

The third and final Five-Year National Development Plan aims at using the resources strategically to achieve the goals of the TDV 2025. Other purposes of the Plan are to implement the sectoral strategic plans, agreements and regional and international strategic plans including the implementation of the Sustainable Development Goals (SDGs) to accelerate economic growth and social development.

Specific to the tourism industry, the Plan aims at: (i) building on achievements realized towards attainment of TDV (2025) to make Tanzania a semi-industrialized, middle-income country by 2025; (ii) strengthening capacity building in the areas of science, technology and innovation to enhance competitiveness and productivity in all sectors especially the productive, manufacturing

and services sectors to enable Tanzanians to benefit from the opportunities available within the country; (iii) facilitating increased business start-up and private sector involvement to find the best way to promote the growth of the sector in tandem with job creation and making the sector a strong and reliable partner in development; (iv) promoting exports of services including tourism, banking services, insurance and entertainment (v) accelerating inclusive economic growth through poverty reduction and social development strategies as well as productive capacity for youth, women and people with disabilities; and (vi) strengthening the relationship between the sectors that are endowed with natural wealth and resources with other economic and social sectors.

The Ngorongoro Sopa Lodge has been, and will continue to be implemented alongside the objectives of the Third Five-Year National Development Plan (2021/2022-2025/2026) to ensure that any management approach of the facility does not compromise its goals and outcomes.

3.5.3. Ngorongoro Conservation Area –Management Zone Plan (2021-2026)

While the third NCA-GMP to be written and implemented since the establishment of the NCA is pending and waiting for approval by appropriate Authority, the NCAA prepared, and is implementing the MZP (2021-2026) with the intention of guiding and facilitating the management of the NCA resources, the uses and limits permitted within different management zones in the area, and the infrastructure development needed to support that management and use.

The NCA-MZP (2021-2026) aims at providing a framework for achieving and reconciling the trio management needs of the NCA, which are conservation of natural resources, safeguarding the interests of resident pastoralists of the area and promoting tourism sector. The zones identify areas where similar types and levels of use and management emphases are applied; based on the NCA purpose, its exceptional resource values, appropriate uses, and management objectives.

Nine (9) management zones are currently delineated in the NCA. The management zones are; the Craters that include the Ngorongoro, Olmoti and Empakaai; the Catchment Forests, which embraces the NHFR; the Development zone where settlement and accompanied social services as well as tourism investment are allowed and the Ndutu marshes zone. Others are the Geo-sites, which include the Olduvai Gorge, Alaitole Footprints, Shifting sands and the Goal Mountains; the Grazing zone; the Migration routes and corridor zone; External Resource zone and the External Buffer Zone (NCAA, 2021).

Due to the fact that the Ngorongoro Sopa Lodge started its operations in 1992 when the first approved GMP (1996-2006) was not in place, the Lodge is located in the Catchment Forests Zone according the NCAA-MZP (2021-2026). An initial environmental audit that was conducted in 2015 revealed that the Lodge has earned several respects for its long-standing appreciation of environmental conservation at the respective site in particular and the NCA in general. With the same appreciation of environmental conservation, the Company commissioned this EIA study to identify the significant impacts of the facility and recommend possible mitigation measures at this particular time when the it is under renovation, upgrading and expansion.

3.5.4. The NCAA Corporate Strategic Plan (2021- 2026)

According to the Authority's CSP, the vision of the NCAA is to use her prominence as one of the 7th wonders of Africa to guarantee sustainable conservation of natural and historical resources, and human development in the Ngorongoro, African continent and the world. The mission statement is to conserve the natural and historical resources and provide optimal social services to residents and staff as well as provision of high-quality services to tourists. The NCAA-CSP recognizes that in order to achieve its vision and implement its mission, core values of the Authority which are, sustainability, valuing people and accountability to stakeholders shall be observed.

The CSP addresses i) Wildlife resources, ii) Tourism resources, iii) Revenue collection iv) Community development, and; v) Corporate governance as key objectives of managing the NCA. In view of the above, the Consolidated Tourist and Hotels Investment Limited commits itself to supporting the realization of the Authority's core values, which are related to the Company including, provision of high-quality services to visitors, respecting the culture of neighbouring communities, being transparent and paying in a timely manner Government taxes and all relevant fees and levies without compromising the sustainability of the outstanding resource values of which the NCA was established to preserve.

3.5.5. The NCAA Private Concession Policy, Strategy and Procedures (2019-2024)

According to the NCAA Private Concession Policy, Strategy and Procedures (2019-2024) the purpose of the Authority is primarily to protect and promote biodiversity for sustainable human benefits. This goal can only be realized through sustainable non-consumptive utilization of biodiversity, cultural and geological heritage, mainly by working or networking with the private sector and the NGOs. This is because people from the private sector in the tourism industry have a wide experience on harmonizing available products with market demand and the subsequent flexibility to tuning to varying tourist requirements.

In view of the above, the action by the NCAA to permit the Consolidated Tourist and Hotels Investment Limited to upgrade the existing facility and expand it to add more guest rooms and associated components should not be doubtful because the action supports the NCAA Private Concession Policy, Strategy and Procedures (2019-2024), which advocates for efforts to increase up-end guest beds in the NCA. Nonetheless, the Policy cautions that most of the land that is potentially suitable for concessions is characterized by fragile environments, requiring careful attention to the management of concessions in ways that would avoid negative impacts and maintain the value of the natural assets.

Section 2.3.1 of the NCAA Private Concession Policy, Strategy and Procedures (2019-2024) stipulates that concessions will be awarded either through a competitive bidding process, or direct awarding and the Conservator has the discretion to determine whether a concession should be awarded directly or through tendering. Whether the Conservator will decide to award a concession through the tender or directly, the decision will be based on assessment report that will be conducted by the Concession Committee explaining in detail, the anticipated benefits to the NCA, towards the implementation of the concession and the requirement of the Authority.

According to the NCAA letter with reference number CD.368/540/01-C/115 of 13th November, 2023, the joint review exercise was conducted on the ground between the Authority and the Proponent. The result of the exercise was production of two site maps (10.1-acre for the existing property and 3.04-acre for the presidential wing extension). This joint exercise confirms that the decision by the Conservation Commissioner to permit the investor to modernize the Lodge provided the aggregate guest beds do not exceed 220 was based on an advice, which was extended by the Concession Committee.

Nonetheless, the NCAA-Private Policy, Strategy and Procedures (2019-2024) acknowledges that the development of concessions shall be limited to accommodation facilities and services that fall within certain conditions including those, which will be essential and appropriate for public use and enjoyment; have the potential to increase the revenue of the Authority; developed in locations, resolved to be in line with the preservation and conservation of values and status of the area; in line with relevant government policy and legal frameworks; and will not unjustifiably impair the value and status of NCA. This EIA study was therefore commissioned to identify and recommend actions that have least or absent impacts on wildlife welfare including their constituent sensitive and critical habitats; sustain development with the minimum disturbances to native vegetation; avoid areas with significant cultural, archaeological and paleontological values, and other sites that may disrupt the setting of natural phenomenon of the environment and become an eyesore.

3.6. Conventions and Agreements

3.6.1. The East African Community Treaty (1999) amended in 2007.

The Treaty that established the East African Community (EAC) was signed by heads of partner states on November 30, 1999 in Arusha, Tanzania and came into force on July 7, 2000. The EAC was formerly launched on January 15, 2001. Currently the Community comprises seven Party States, which are, Burundi, Democratic Republic of Congo, Kenya, Rwanda, South Sudan, Tanzania and Uganda. Somalia is also in the process of joining the Community. The wide goal of the EAC is to enhance cooperation in all areas for mutual benefit of the Partner States. Among the objectives of the Community is to promote a sustainable growth and equitable development of Partner States including rational utilization of the Region's natural resources and protection of the environment (<http://www.africa.union.org>, 2015).

Wildlife, particularly the migratory species of the Serengeti ecosystem, which the NCA is part of, is a shared resource between Kenya and Tanzania, which the Treaty aims to conserve among others. The investor of the Ngorongoro Sopa Lodge is aware of the close relationship, which the project bears with this Treaty. This is the reason why the Consolidated Tourist and Hotels Investment Limited commissioned the conduction of this EIA study to take on board all measures that will assure the preservation of the ecosystem's wildlife resource. This action demonstrates on how the Company is environmentally conscious when conducting renovation, upgrading and expansion of the Lodge particularly to ensuring that the wildlife species, which are transboundary resource and their constituent habitats are not impaired.

3.6.2. The Lusaka Agreement, 1994

The Lusaka Agreement on cooperative enforcement of operations directed at illegal trade on wild fauna and flora is an intergovernmental establishment with the main function of facilitating cooperation activities in, and among Party States in carrying out investigations on violations of national laws pertaining to illegal trade in wild animals and plants. The Agreement was the brain-child of the Wildlife Law Enforcement Officers from eight East and Southern African countries, which met in Lusaka, Zambia in December 1992 under the auspices of the Zambia Ministry of Tourism.

One year later, the development of this African initiative led to formal intergovernmental negotiations under the support of the United Nations Environmental Program (UNEP), which resulted in adopting this Agreement on 8th September, 1994. The Agreement came into force on 10th December 1996 with ratification or formal acceptance of four signatories. Currently there are six Party States to the Agreement, which are Lesotho, Kenya, Tanzania, Uganda, Zambia and the Democratic Republic of Congo. The Republic of South Africa, Ethiopia and the Kingdom of Swaziland are signatories.

The Agreement provides for setting up a permanent Task Force that would implement its objectives. Consequently, the Task Force was launched on 1st June, 1999 with its headquarters located in Nairobi, Kenya. The mission statement of the Lusaka Agreement is to support Member States and Collaborating Partners in reducing and ultimately eliminating illegal trade in wild fauna and flora in Africa through: (a) facilitation of cooperative activities in undertaking law enforcement operations (b) investigation on violations of national wildlife laws (c) dissemination and exchange of information on illegal trade activities and (d) capacity building including promoting conservation awareness among different stakeholders.

As long as the NCA, where the Ngorongoro Sopa Lodge, which is under renovation and reconstruction as well as proposed for extension to construction new presidential suites and associated components is located harbours abundant and diverse species of wild fauna and flora, and the former is a trans-boundary resource, the Consolidated Tourist and Hotels Investment Limited commits itself to ensuring that all operations and activities that will be conducted at the site and its immediate surroundings shall comply with the provisions of the Lusaka Agreement. Accordingly, the Concession agreement that was signed in 2023 between the NCAA and the investor requires the owner of the facility to report any illegal activities that may be conducted by other parties. The operator of the facility is also required to employ reasonable and diligence actions to ensure that none of its employee or visitor carries any firearms whether on the way to, and from the facility unless one is specifically authorized in writing by the Management of the NCAA.

3.6.3. The Convention Concerning the Protection of the World Cultural and Natural Heritage – the “World Heritage Convention”, 1972

The World Heritage Sites Convention, 1972 is concerned with the protection of world’s cultural and natural heritages. It was adopted by the UNESCO General Conference in Paris in 1972 and Tanzania ratified it in 1977. Through this Convention, the UNESCO encourages the identification, protection and preservation of cultural and natural heritages considered to be of the universal outstanding value. By agreeing to set aside such areas, State Parties agree to take

necessary measures to preserve the resources for good of humankind in the world and also agree that all world heritage sites belong to all people of the globe irrespective of the territories on which they are located.

The NCA was inscribed on the World Heritage Site list in 1979 under the natural resource's criterion in recognition of its outstanding natural resource values including the greatest mammal migration on earth, the NHFR, the Ngorongoro Crater with its great concentration and high diversity of mammalian species and the threatened and endangered species including the black rhino. In 2010, the NCA was re-inscribed as the mixed Natural and Cultural World Heritage Site in recognition of the presence of the Olduvai Gorge and the Alaitole Footprints where the first human being to walk upright was depicted.

With that recognition, the investor is committed to undertake activities at the Ngorongoro Sopa Lodge throughout the life cycle of the facility in a manner that will minimize degradation of all outstanding universal values that enabled the NCA to be inscribed on the list of the World Heritage Sites. During the project implementation and especially at the excavation stage, care will be taken such that, where any relic is discovered, it will be reported to an Administrative Officer, the Director of Antiquities, the Conservator or the Curator of the Museum at Olduvai Gorge.

3.6.4. Guidance and Toolkit for Impact Assessment in a World Heritage Context, 2022

The Guidance and Toolkit for Impact Assessment in a World Heritage Context, 2020 explains how impact assessments can be used to protect the OUVs of the World Heritage properties in order to manage continuity and change by informing good decision making in the context of the UNESCO's Convention Concerning the Protection of the World Cultural and Natural Heritage – the 'World Heritage Convention'. The Convention was adopted at a time of great concern about the effects of rapid transformations taking place in the modern world. In 2022, the Convention was already been ratified by 194 States Parties with more than 1,000 heritage places inscribed on the list. However, due to various changes, which encompass climatic, economic, social, cultural and demographic aspects, these heritages have not fully realized the original and significant objective of their designations, which is to preserve the balance between people and their natural and cultural environment.

Both the natural and the cultural heritages are important to the entire global community and cooperation to ensure that the heritages are not only protected but also given a role in a contemporary society and handed over to future generations in the best possible condition. Changes both within and outside the World Heritage properties therefore need to be managed in line with the Convention's objectives. Impact assessment can be critical for this, and indeed has long been used as a tool in the context of World Heritage properties. It is from this background the EIA study of the proposed modernization and extension of the Ngorongoro Sopa Lodge has been conducted with reference to this guidance and toolkit to ensure that the activities to be conducted at the site and areas of influence during all stages of implementation do not compromise the NCA-OUVs, which compelled the property to be inscribed on World Heritage List.

3.6.5. The Convention on International Trade in Endangered Species, 1973

The Ngorongoro Crater, and especially the boundary of its 500-meter buffer from the rim, which is located no more than one kilometre from where the Ngorongoro Sopa Lodge is situated harbours abundant and diverse wild animals including those, which are listed in the International Union for the Conservation of Nature (IUCN) as critically endangered and endangered species. These are the Black rhino and the African elephant respectively. Other species of mammals, amphibians, reptiles, birds and plants, which are less documented but could be in the list of the Red Book might also be present in, or close to the project area.

Since the NCA is optimistic that the renovation, upgrading and the proposed extension of the Ngorongoro Sopa Lodge will attract more visitors and the subsequent increase in revenue, the security of the area in particular and the whole of the NCA in general will therefore be enhanced through the increased allocation of the conservation budget. To realize the above Management of the Lodge will assign and motivate experienced staff to closely control disturbance to the animals and their habitat, and report any illegal activities including movement of doubtful individuals within, and in the vicinity of the facility to relevant authorities.

3.6.6. The Convention on the Conservation of Migratory Species of Wild Animals, 1979

The Convention on the Conservation of Migratory Species of Wild Animals (abbreviated as CMS or referred to as the Bonn Convention) aims at conserving terrestrial, marine and avian migratory species throughout their range. It is an intergovernmental treaty, concluded under the auspicious of the UNEP, concerned with the conservation of wildlife and habitats on a global scale. State Parties acknowledge the importance of migratory species being conserved and of Range States agreeing to act to this end, "whenever possible and appropriate", paying special attention to migratory species and taking individually or in cooperation appropriate and necessary steps to conserve such species and their habitat.

The State Parties appreciate the need to avoid any migratory species becoming endangered. In addition to the NCA habitats supporting migratory wildlife species of the Serengeti-Mara ecosystem, the area also consists of alkaline lakes that attract migratory birds, which any tourist investment like Ngorongoro Sopa Lodge should consider the sustainable wellbeing of migratory species both the wild animals and the birds.

3.6.7. The Convention on Biological Diversity, 1992

Adopted at the Rio de Janeiro "Earth Summit" in June 1992, the Convention on Biological Diversity (CBD), 1992 recognizes that biological diversity is not only about plants, animals and microorganisms and their ecosystems, but it includes people and their need for food, security, medicines, fresh air, safe water, shelter as well as clean and healthy environment in which they live. The Convention is geared towards addressing the fragmentation, degradation and upright loss of forests and other habitats, all of which representing much larger threat to biodiversity. It aims at developing national strategies for the conservation of biological diversity, sustainable use of its components and fair and equitable sharing of benefits arising out of the utilization of the genetic resources.

To achieve the above, Article 14 emphasizes on the need for carrying out the EIA on all projects that are likely to cause significant adverse impact on the biological diversity with a view to minimizing such effects. This Article has been taken care of by the EMA, Cap. 191 and the NCAA Private Concession Policy, Strategy and Procedures (2019-2024); both requiring the conduction of the EIA for development projects carried out in the NCA and their immediate surroundings.

The Proponent is informed about the Convention's dedication to promoting sustainable development and to becoming a practical tool for translating the principles of Agenda 21 into the reality. This is the reason why the Proponent commissioned this EIA to ensure that the ongoing renovation and proposed upgrading and extension of the Ngorongoro Sopa Lodge is conducted in a manner that does not compromise the interest of conservation of biological resources including endemic, rare, threatened and endangered species of the area, their constituent habitat and the ecologically sensitive sites.

3.6.8. The United Nations Framework Convention on Climate Change, 1992

Adopted in May 1992, the United Nations Framework Convention on Climate Change (UNFCCC), 1992 sets an overall framework for intergovernmental efforts to tackle the challenges posed by climate change. It recognizes that the climate system is a globally shared resource, which stability can be affected by emissions of gases such as carbon dioxide and carbon monoxide produced from various development projects ([http://unfccc.int.](http://unfccc.int), 2019).

Deforestation is often attributed to climate change among other factors in less developed countries including Tanzania. Whereas forest conservation is one of the top priorities emphasized by the NCAA as no cutting down of trees and use of forest products by accommodation operators is allowed in the NCA, the current EIA study recommends the replacement of the current diesel-engine generators with the natural gas-run ones, which are believed to produce relatively lesser pollutants than the former, water recycling and production of the bio-gas for and the LPG for cooking, which are among the many approaches of reducing emission of global warming gases.

3.6.9. The International Labor Organization Conventions

The International Labor Organization (ILO) Governing Body identifies many Conventions covering subjects that are considered to be fundamental principles and rights at work. The four ILO Conventions, which are more relevant to the renovation, upgrading, expansion and operation of the Ngorongoro Sopa Lodge that were considered in this EIA study are Minimum Age Convention, 1973 (C138); Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (C148), Occupational Health and Safety Convention, 1981 (C: 155) and Worst Forms of Child Labor Convention of 1999 (C182).

(a) The Minimum Age Convention, 1973 (C138)

The objective of this Convention is to abolish all instances of the child labour and establish a minimum age for admission to employment. The requirement that the people are at least 15, or a higher age determined by member states, or 14 for member states whose education are developing, before working, and 18 years old before dangerous work. Tanzania ratified this convention on 16th December 1998. As such, the proponent shall adhere to the requirements of this Convention by ensuring that no child as defined in this Convention shall be employed at the

Ngorongoro Sopa Lodge when conducting any activity ranging from the ongoing renovation works to operation of the facility.

(b) The Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (C148)

The objective of this Convention is to protect workers against occupational hazards in the working environment as a result of air pollution, noise and vibration. Tanzania ratified this Convention on 30th May 1983. The proponent of the Ngorongoro Sopa Lodge shall adhere to the requirements of the convention by limiting air, noise and vibration pollutions within the prescribed limits through the use of cleaner technology such as solar power, natural gas-run generators, bio-gas, the LPG and limiting construction works during the day time to avoid disturbance to the wild animals from noise and vibrations, which are mostly active during the night.

(c) The Occupational Health and Safety Convention, 1981 (C: 155).

The Occupational Health and Safety Convention, 1981 applies to all workers in the branches of economic activities. It provides that each Member State shall, in the light of national conditions and practices, and in consultation with the most representative organizations of employers and workers, formulate, implement and periodically review a coherent national policy on occupational safety, health and the working environment. The aim of this Convention is to prevent accidents and injuries linked to, or occurring in the course of work and minimize as so far as is reasonably practicable, the causes of hazards inherent in the working environment.

In view of this, Tanzania enacted an Occupational Health and Safety Act, Cap. 297, which the proponent of the Ngorongoro Sopa Lodge is aware of, and committed to comply with, particularly by providing the PPE to the workers during all phases of the project implementation and inviting the OSHA at least yearly at the facility to assess the working environment as well as health and safety of employees.

(d) The Worst Forms of Child Labor Convention, 1999 (C182)

This Convention sets out new measures for immediate and comprehensive action to prohibit and eliminate the worst forms of child labour. Among the worst forms of child labour are, slavery, prostitution, drug trafficking and other dangerous jobs. Tanzania ratified this Convention on 12th September 2001. The proponent shall adhere to the requirements of the Convention by prohibiting and eliminating the worst forms of child labour throughout the life cycle of the Lodge existence.

3.6.10. The International Code of Conduct on the Distribution and Use of Pesticides

The International Code of Conduct on the Distribution and Use of Pesticides was one of the first voluntary Codes of Conduct in support of increased food security, at the same time protecting human health and environment under the framework of the Food and Agriculture Organization (FAO). The Code represents an updated standard for pesticide management that embodies a modern approach, leading to sound management of pesticides, which focuses on risk reduction and protection of human and environmental health. While Article 1.7.3 of the Convention promotes practices, which reduce risks in the handling of pesticides including the minimization of adverse effects on humans and the environment and preventing accidental poisoning resulting

from improper handling, Article 5.3.4 directs for the protection of biodiversity and minimization of adverse effects of pesticides on the environment including water, soil and air as well as on non-target organisms.

The fact that only approved pesticides for controlling nuisance creatures to humans such as mosquitoes and ants shall be used at the Ngorongoro Sopa Lodge, if need for thorough fumigation arises, experienced and registered companies shall be contracted and by so doing, the proponent shall be complying fairly well with this International Code of Conduct on the Distribution and Use of Pesticides.

3.6.11. The International Plant Protection Convention, 1952

The purpose of the International Plant Protection Convention (IPPC) of 1952 is to secure common and effective action of preventing the introduction and spread of pests of plants and plant products, and to promote appropriate measures for their control. The implementation of the Convention has been applied mainly to crops, but it also extends to the protection of natural flora. Thus, the scope of the IPPC covers any invasive alien species that may be considered to be a plant pest. Because the Proponent signed a Concession agreement, which contains provisions among others that prohibit disturbance or destruction of any indigenous plant or tree growing within the NCA and which disallows the introduction and encourages the removal of alien plants in the Area, the Management of the Lodge will seek assistance from the NCAA to identify or alien species found at facility and more specifically in the nursery and surrounding areas for the purpose of removing them.

3.7. Project Administrative Framework

The institutional arrangement for environmental management in Tanzania as provided in EMA, Cap. 191 spells out seven (7) institutions including the Minister responsible for environment who is the overall in-charge of administration for all matters related to the environment. Apart from the Minister, other legal institutions for environmental management in the country as spelt out by the Act are:

- The National Environmental Advisory Committee;
- The Director of Environment;
- The National Environment Management Council;
- The Sector Ministries;
- The Regional Secretariat; and,
- The Local Government Authorities including Cities, Municipals, Districts, Townships, Wards, Villages, and Mitaa.

Administratively, the Ngorongoro Sopa Lodge is located in the NCA, Ngorongoro District in Arusha Region. The headquarters of the Consolidated Tourist and Hotels Investment Limited and most of the top Management members are stationed in Nairobi, Kenya with a Sub Office, which is located in Arusha city. The day-to-day activities of the facility are supervised by the Lodge Manager who is stationed within the NCA and assisted by departmental heads and supervisors. The major functions of the Camp Manager are, to ensure smooth running of the facility including efficient transportation of tourists within the NCA and surrounding environments,

provision of high-class accommodation facilities including meals, and proper functioning of the Lodge utilities. The Lodge Manager is also responsible for the protection of the environment and ensuring that the welfare of employees complies with the National Health Policy, 2007 and the National Employment Policy, 2008. The occupational and public safety and health matters are also administered by the Lodge Manager.

There are three assistants to the Camp Manager, one assumes the responsibilities of the Food and Beverage, the other one is in-charge of housekeeping issues and the third assistant is deals with issues of administration and human resources. Other Camp staff include chefs, storekeeper, guest relations, waiters, barmen, housekeepers, security guards, drivers, cleaners and electricians. Before the closure of the Lodge, a total of 165 workers were permanently employed; the number that will increase to approximately 180 people when the facility will be re-commissioned. There will be two resident drivers cum tourist guides at the Lodge while others will use the facility irregularly when accompanying visitors. More people will be employed on contract especially during peak seasons and on special assignments. The NCAA will bear great responsibility to enforcing compliance of the project within operating policies and legislation context.

Institutionally, the Ngorongoro District Council bears some responsibility to the project because the project location falls in its administrative jurisdiction. The neighbouring Karatu District also assumes close relationship with the Ngorongoro Sopa Lodge as most of the foodstuffs especially the perishables have been and will continue to be purchased from Karatu Township. Some local building materials like sand for ongoing renovation is, and for forthcoming reconstruction and construction of new components will also be procured in the District. Since the NCA falls in the administrative jurisdiction of the Arusha Region and Arusha city is a major gateway to guests who visit the northern Tanzania protected areas including the NCA, the project will also have a wide range of significance to the Regional Secretariat. Dumping of non-decomposable waste, which is currently not recycled in Arusha Region will be done at the Muriel landfill (Appendix 7) whereas recyclables will be delivered to associations dealing with recycling activities in the city.

In addition to the Ministry of Natural Resources and Tourism (MNRT) where the proposed project directly falls, it is also relevant to the President's Office where issues pertaining to President's Office - Regional Administration and Local Government are coordinated from as well as the Vice President's Office, where the Minister and the Director responsible for environment are working from. Other relevant ministries are the Livestock and Fisheries Development because livestock production is a back-borne of the economy of the NCA resident pastoralists and Water particularly the Internal Drainage Basin Water Board. Others are, the Finance and Economic Affairs specifically to issues related to tax payment compliance, Home Affairs, which oversees issues related to the fire and rescue services and the Ministry of Community Development, Gender, Women and Special Needs, which is the mother Ministry for OSHA. OSHA is charged with, among other responsibilities to oversee issues related to human safety and health.

The major and relevant government institution to this project besides the NCA is the NEMC. The NEMC has legal mandate to oversee environmental compliance and together with the National Environmental Advisory Committee, the Council is responsible for advising the Minister responsible for environment on the EIA and the EA reports who in turn gives final decision on

whether an environmental clearance certificate should be granted or not. Key regional and international organizations to the project are the EAC and the UNESCO respectively. While one of the EAC objectives is to promote a sustainable growth and equitable development of Partner States including rational utilization of the region's natural resources and protection of the environment, the UNESCO is an international organization, which oversees the performance of the World Heritage Sites to which the NCA is listed. Roles and responsibilities of key institutions in Tanzania with respect to the proposed project are summarized in Table 3.1.

Table 3. 1: Summary of roles and responsibilities of key institutions

Institution	Roles and Responsibilities
NATIONAL LEVEL	
President's Office-Regional Administration and Local Government	<ul style="list-style-type: none"> ▪ Coordinates and supervises regional development management and administration; ▪ Coordinates rural and urban development and management of policies and strategies; ▪ Coordinates activities of the Regional Secretariats and builds their capacity in institutional development strategies for integrated socio-economic development and financial development of the Local Government Authorities (LGAs); ▪ Coordinates and supervises development planning and sectoral interventions on donor supported programmes at district and other local levels; ▪ Issues ministerial guidelines to Regional Secretariats and LGAs; and ▪ Strengthens the channel of communication and information flow between the national and sub-national levels.
Vice President's Office - Division of Environment	<ul style="list-style-type: none"> ▪ Coordinates various environment management activities in Tanzania; ▪ Advises the Government on legislative and other measures for the management of the environment in the country; ▪ Advises the Government on international environmental agreements; ▪ Monitors and assesses activities, being carried out by relevant agencies in order to ensure the environment is not impaired; ▪ Coordinates the implementation of the National Environmental Policy and other international instruments linked to the environment; and ▪ Advises the Government on issuance of environmental certification.

Institution	Roles and Responsibilities
Ministry of Natural Resources and Tourism	<ul style="list-style-type: none"> ▪ Oversees sustainable conservation of natural and cultural resources, and development of tourism; ▪ Issues policy guidance on natural resources conservation and tourism related matters; ▪ Provides legal frameworks; ▪ Issues license and provide certificates of compliance; ▪ Formulates, reviews and enforces respective policies, laws and regulations; ▪ Sets operational standards within the Ministry; ▪ Conducts capacity and institutional building in the Ministry and other relevant partners; ▪ Conducts monitoring and evaluation of projects carried out within the Ministry; and ▪ Coordinates environmental matters at the ministerial level through the Ministerial Environmental Unit.
Ministry of Livestock and Fisheries Development	<ul style="list-style-type: none"> ▪ Oversees the management and development of livestock; ▪ Supports the improvement of pastoralists' livelihoods without compromising the needs of environment conservation; ▪ Builds and supports the technical and professional capacity of local government authorities and private sector in order to develop, manage and regulate the livestock sustainably.
Ministry of Water	<ul style="list-style-type: none"> ▪ Issues permit for water boreholes' drilling and water use rights; ▪ Oversees sustainable development and management of the water resources; ▪ Facilitates participatory improvement and management of water resources; and ▪ Oversees compliance on paying water use fee.
Ministry of Community Development, Gender, Women and Special Needs,	<ul style="list-style-type: none"> ▪ Promotes community development, gender equality, equity and children rights; ▪ Formulates policies, strategies and guidelines in collaboration with relevant stakeholders; and ▪ Ensures cultural growth, labour and employment, and community mobilization and empowerment.

Institution	Roles and Responsibilities
National Environment Management Council	<ul style="list-style-type: none"> ▪ Registers and screens development projects, and approves the terms of reference for conducting EIAs and EAs ; ▪ Reviews environmental assessments, audits and monitoring; ▪ Reviews and recommends for approval and issuance of environmental certification; ▪ Enforces and ensures compliance of the national environmental quality standards; ▪ Ensures that environmental management and environmental monitoring plans are implemented by project proponents; ▪ Initiates and develops procedures and safeguards for the prevention of accidents which may cause environmental degradation and develops remedial measures where accidents occur; and ▪ Renders advice and technical support where possible to different stakeholders.
Occupational Safety and Health Authority	<ul style="list-style-type: none"> ▪ Protects workers against potential hazards at workplaces that can cause occupational diseases and accidents; ▪ Inspects job sites to enforce compliance with safety and health standards; and ▪ Oversees workplace safety and health in Tanzania Mainland;
Ngorongoro Conservation Area Authority	<p>Awards investment concessions;</p> <ul style="list-style-type: none"> ▪ Monitors activities conducted by tourist facilities in the NCA including accommodation facilities and related activities; ▪ Makes follow up on the compliance of the GMP/MZP and other management guidelines; ▪ Regulates tourism business within the NCA; and ▪ Oversees compliance on making payment of taxes, fees and levies to respective organizations
REGIONAL LEVEL	
Arusha Regional Secretariat	<ul style="list-style-type: none"> ▪ Oversees and provides advice on implementation of national policies at the regional level; ▪ Enforces laws and regulations within the level of its jurisdiction; and ▪ Provides advice on implementation of development projects and activities at the regional level.
DISTRICT LEVEL	
Ngorongoro District Council	<ul style="list-style-type: none"> ▪ Oversees and provides advice on implementation of national policies at the district level; ▪ Enforces laws and regulations within the level of its jurisdiction; and ▪ Provides advice on implementation of development projects and activities at the District level.
COMMUNITY LEVEL	

Institution	Roles and Responsibilities
Village Development Committees	<ul style="list-style-type: none"> ▪ Acts as watchdog for the protection of environment, security and other community matters; ▪ Provides information on local situation; ▪ Provides information on the social, economic, environmental situation at the Village level; ▪ Provides advise on how to improve the livelihoods of the local community; and ▪ Renders assistance and advices on the implementation of projects.
THE PROPONENT	
Consolidated Tourist and Hotels Investment Limited	<ul style="list-style-type: none"> ▪ Prepares the project concept and executes the EIA study; ▪ Implements projects and oversees the day-to-day environmental management and monitoring; and ▪ Undertakes subsequent environmental audits post the EIA study and ensures compliance with the ESMP and the EMP.

CHAPTER FOUR

4.0. DESCRIPTION OF THE SITE FOR THE PROPOSED PROJECT

4.1. Location and Accessibility

4.1.1. Location

Ngorongoro Sopa Lodge, which is under renovation is located to the eastern side of the Ngorongoro Crater in the NCA lying in the NHFR in the Ngorongoro District, Arusha Region. Located at the highest cliff of the Ngorongoro crater rim at the GPS coordinates 36M 797499 UTM 9651002 the Lodge becomes the best viewing point of the crater floor and beyond, up to the horizon.

4.1.2. Accessibility

The site is situated approximately 180 kilometres from the City of Arusha, which is the major gateway for the tourists visiting the country's northern tourist attractions. Out the total distance about 154 covers a stretch up to Loduare entrance gate and the remaining 26 includes five (5) kilometres from Loduare to the View Point, almost 20 kilometres from the View Point along the Fosbrooke Road, which traverse the rim towards the Empakaai crater and approximately one kilometre is off the Fosbrooke road to the access the facility to the East.

For the visitors travelling from the Lake Victoria regions and enter the NCA through Naabi Gate, which is in the Serengeti National Park, travel along a distance of 95 kilometres to the View Point. One may also fly to the Ngorongoro airstrip when the weather allows and drive along a distance of around 20 kilometres to arrive at the View Point or fly to Manyara airport, which is located about 45 kilometres from Loduare Gate. The Lemala entrance gate that is situated about two kilometres from the Lodge to the north provide a gentle terrain along an all-weather earth road to access the Ngorongoro crater.

4.2. Baseline Climatology of Ngorongoro Conservation Area

In the Ngorongoro Conservation Area, south-east of the Serengeti, the climate is featured by subtropical to mild and temperate conditions, since it is influenced by altitude. The area experiences a Wet season with two rainy periods: the short rain (Vuli) commences from October to December followed by the long rain (Masika) from March to May, which is featured with short and violent storms and accounts for its widely ranging levels of precipitation (from under 500mm to 1700mm) with April as the rainiest month of the year, there is also a dry season from January to February whereby June to late August is the driest and coolest period.

But due to climate change and variability the rainy seasons tend to be out of phase to some years that led to prolonged dry spell and sometimes heavy wet spells at times.

The temperature is mild during the day and cool (or even a little cold) at night, and it's higher from October to April due to the fact that the sun tends to moves across the tropic of cancer and lower from May to August due to the influence of southern high-pressure systems (Mascarene and St. Helena) and mt Meru and Kilimanjaro, The average daily temperature is about 21 °C from October to April, while it drops to/below 13 °C from June to August;

The average maximum and minimum temperature lie between 13 °C and 31 °C respectively with relative humidity ranging from an average of 65% to more than 95%. The area is also featured with easterly wind blowing at an average of 10kts. The amount of sunshine is approximately 7.5hours per year which is mostly affected by showers of rain, thunderstorms and cloudiness.

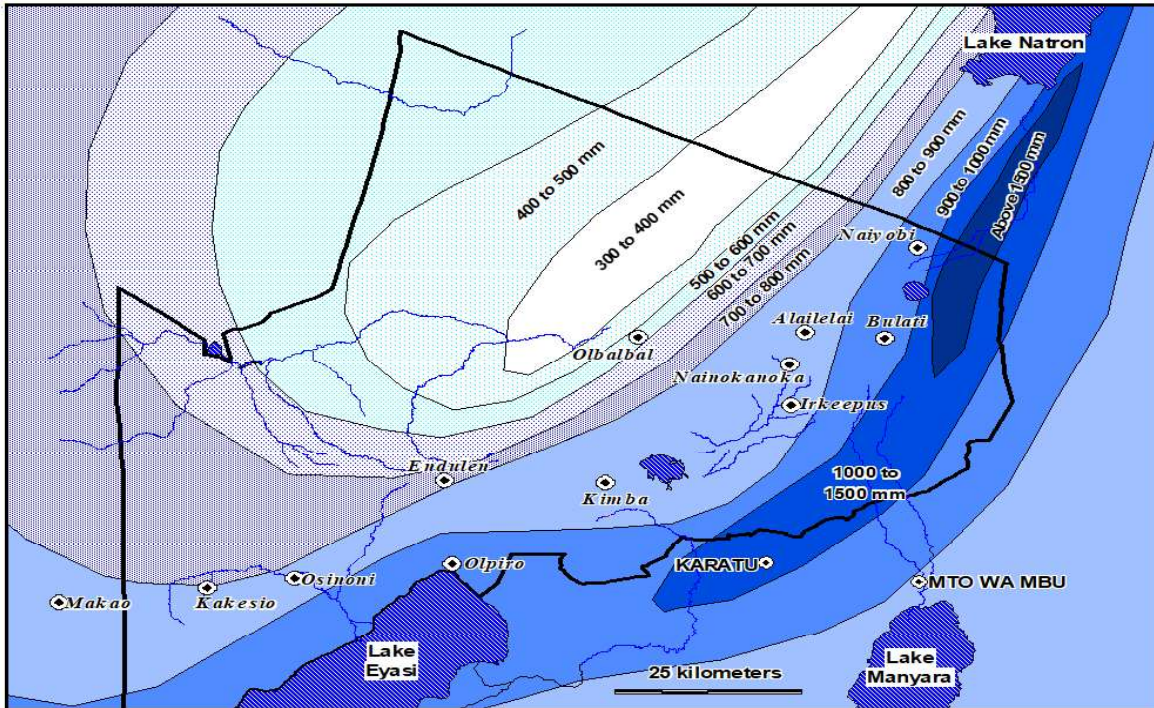


Figure 4. 1: Rainfall Patterns in the NCA (Source: NCAA, 2018 extracted from Homewood and Rodgers, 1991)

4.3. Topography

The NCA has one of the most diverse landscapes in East Africa ranging from arid lowlands to mountain peaks, with a vertical difference of approximately 2,500 metres. The dominant topographic feature around the Ngorongoro Sopa Lodge, which stands at an average altitude of approximately 2,350 ranging from 2316 and 2385 meters above mean sea level, is the Ngorongoro crater, which was an active volcanic mountain but collapsed many million years ago due to volcanic activities to form a 310km² caldera of which 250km² is the floor, which lies at an average of 610meters from the rim. The remaining 60km² comprises steep slopes. Within the crater highlands is also found the Empakaai and Olmoti craters as well as the Loolmalasin Mountain, which is the third highest mountain in Tanzania after Kilimanjaro and Meru.

4.4. Geology and soil

The general geology of the NCA is of Precambrian mobile/orogenic belts as per Geological Survey of Tanzania. Most of the NCA is overlain by volcanic deposits consisting of three main types of rocks, which are the ancient crystalline rocks, the lavas and the ashes (Pickering, 1993). The Ngorongoro Sopa Lodge site, which is generally characterized by gentle topography,

consists of the clay soil type that originated from the early lavas of flood basalts, which were followed by lava flows, and ash deposits to form the current classical volcanic vents.

4.5. Drainage

Much of the drainage pattern in the NCA is of small internal streams, either into the crater lakes, such as the Munge River flowing from Olmoti to Ngorongoro Crater or into depressions such as Olbalbal that may hold water up to 10 months of a wet year. Generally, the NCA has four internal drainage basins namely Olbalbal, Ngorongoro Crater, Empakaai Crater and Malanja depression and six external drainage systems, which discharge their water into saline, land-locked drainage basins, which are lakes Eyasi, Manyara and Natron (NCAA, 2018).

The Oljoronyuki popularly known as Lemala River because it originates from the Lemala Hill within the NHFR in close vicinity of the Ngorongoro Sopa Lodge, which was previously a permanent but currently seasonal flows its water in the Ngorongoro crater during the rainy season. During the expert's site visit that was conducted in June, 2024 stream was dry and the borehole that was the source of water for the operation of the Lodge was not functioning due to scarcity of underground water recharge.

4.6. Biological Resources

The NCA is endowed with many biological values including high density and diverse concentration of wildlife in a semi-confined Ngorongoro Crater, large mammal migration, significant water catchment forest, high flora and fauna biodiversity within pristine wilderness areas and vast open savannah plains with large predator-prey populations that attract tourists and revenue to the Government and neighbouring communities.

4.6.1. Vegetation

The NCA vegetation is variable and shaped by the rainfall and topography. It is wetter in the eastern highlands where the Ngorongoro Sopa Lodge is located. The montane forest vegetation type, which is characteristic within the leased land to the Ngorongoro Sopa Lodge and neighbouring areas is composed of degraded forest that has given way to scrubland and highland wooded-grasslands. The plant species that were identified during the environmental experts' site visit are Strangler Fig *Ficus thonningii*, Broad-leaved Croton *macrostacyus*, Pillar Wood *Cassipourea malosana* and Brittle-wood *Nuxia congesta*. The undergrowth are dominated by *Abutilon longicuspa* and *Urtica massaiense* characterized by open glades and patches of shrubland including, Wild Lions Claw *Crotalaria Crotalaria agatiflora*, Lion's Paw *Leonotis nepetifolia*, *Vernonia auriculifera* and *Eleusine jaegeri* tussock grass.

4.6.2. Wild animals

The main area, which harbours abundant and high density of wildlife in NCA, is the Ngorongoro Crater with approximately 25,000 different species of herbivores. Although the NHFR is relatively poor, in terms of primates and small mammals, the site where the Ngorongoro Sopa Lodge is located has greater influence to the wildlife of the Ngorongoro crater and the forested areas to its proximity to these core protected places. During the site visit that was carried out in June, 2024 animal species, which were seen are the buffalo, bushbuck and black-faced *Crotalaria* monkeys. Signs of the presence or intermittent use of the area by elephants including faeces were seen.

4.6.3. Birds

Close to 600 different bird species have been recorded in the NCA (Baker and Baker 1994). The diverse habitat in the NCA renders the area to be an important home to different bird species. Important bird species in the highland forest are the Augur Buzzard, the rarer Mountain Buzzard, Crowned Eagles and the Bar-Tailed Trogon. Others are the Brown-Backed Woodpecker, which sighting is rare, shrikes, starlings, sunbirds, robins and flycatchers. Out of the recorded bird species those, which were observed during environmental experts visit at the Ngorongoro Sopa Lodge are, Bar-tailed Trogon, Scarlet-chested Sunbird, Superb starling, Quilfinch, Paradise Flycatcher, Black Cuckoo Shrike, Ring-necked Dove, Red-eyed Dove and Speckled Mouse-bird.

4.7. Cultural resources

The cultural resources, which the NCA boasts of are, the fossilized footprints at Alaetoli that are associated with the development of human bipedalism and a sequence of diverse, evolving hominin species within the Olduvai Gorge, which range from *Australopiths* such as *Zinjanthropus boisei* to the Homo lineage that includes *Homo habilis*, *Homo erectus* and *Homo sapiens*. The overall landscape of the area is seen to have the potential to reveal much more evidence concerning the rise of anatomically modern humans, modern behaviour and human ecology. Nonetheless, over 65 years since Drs Mary and Louis Leakey started research on cultural heritages contained in the NCA, no discovery of the cultural remains and key information about humanity's existence has ever been reported around the Ngorongoro Sopa Lodge.

4.8. Ethnography

Maasai are the best known of the ethnic groups in the NCA, and today they make up about 97% of the estimated 110,000 resident population (MNRT, 2020). The remaining 3.0% are Datoga and few Hadzabe families that live in the Lake Eyasi basin; part of the NCA. Whereas Maasai are traditionally pastoralists practicing transhumance mode of production, Datoga are agro-pastoralists; both tribes keeping estimated 250,000 cattle and about 850,000 goats and sheep (MNRT, 2020). Majority of the few remaining families of the Hadzabe tribe have remained purely traditional hunter-gatherers using bow and arrow, feeding on roots and fruits, dressing in animal hides and living in caves and thatches trying to stay in remote areas away from other people. There are no local people living near the Ngorongoro Sopa Lodge because human habitation in the NHFR is not allowed. However, some of them and particularly during dry period graze cattle near the facility. The nearby permanent habitation is about five (5) kilometres at Ilkeepus village. Livestock grazing and firewood collection by the local people are the major factors attributed to the degradation of forest.

4.9. Conservation status

Based on its outstanding universal value and the criteria set by the World Heritage Sites (WHS) Committee for selection of the sites, the NCA was inscribed on the World Heritage List under the natural criteria in 1979 and was re-inscribed as a mixed natural and cultural property in 2010. In 1981, NCA was recognized internationally as a part of the Serengeti-Ngorongoro Biosphere Reserve, under UNESCO-Man and the Biosphere Program (MAB). In 2013, NCA was voted as one of the seventh natural wonders of Africa, and in April 2018, it was nominated as one of the

Global Geo-parks. The NCA was nominated as the Africa's Leading Tourist Attraction in 2023 by the World Travel Awards.

4.10. Tourist trend in NCA

The outstanding universal values, which the NCA boasts of, and the fact that it is the only protected area in the whole of Africa, which possesses all the three international statuses namely the mixed cultural and natural heritage, biosphere reserve and the geo-park, it has continued to attract tourists both from within and outside the country reaching 725,535 in 2019 before the pandemic Covid-19 hit the world (Table 1.1). In 2023/2024, the NCA received 908,627 visitors, out of them 553,875 international and 354,752 domestic tourists. This number transcended the 752,215 that was recorded in 2022/2023.

4.11. Tourism accommodation facilities

Tourism accommodation facilities in the NCA include lodges; permanent tented camps; semi-permanent camps; and special and public campsites. Permanent accommodation facilities including seven (7) lodges and 12 permanent and semi-permanent tented camps provided total of 858 beds in 2020 against requirements that was estimated to 1,400. Further, the Ngorongoro Sopa Lodge, with capacity of approximately 200 beds was closed during the Covid-19 pandemic until in 2023 when a decision to conduct major facelift was started. This act expanded further a gap between supply and demand in visitor beds in the NCA. This situation partly obliges some guests to spend nights in accommodation facilities located outside the NCA and others in less permanent ones, which sometimes are not their choices.

Because more accommodation facilities are being established in the NCA to appease the needs of clients who prefer to stay in the area where the wildlife and wilderness that entice their visit are located, it is very important to consider the distance between one facility and the other in order to improve visitors' privacy and enjoyment as well as well environmental preservation. The existing relatively closer and planned accommodation facilities to the Ngorongoro Sopa Lodge are therefore; the Lions Paw PTC (2.5km), to the north-west (Figure 2.2) and the proposed Paradise and Wilderness Lodge, to be situated about five (5) kilometres to the south.

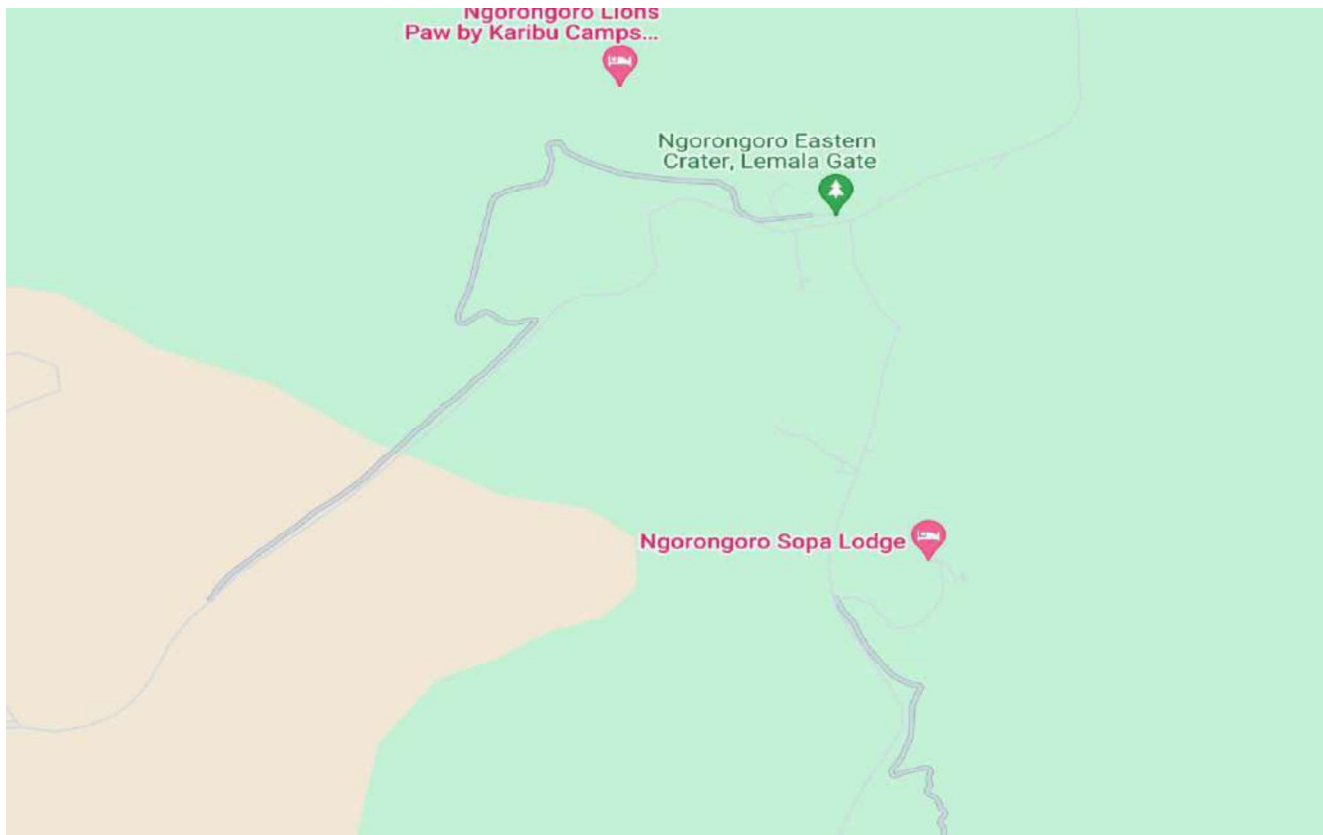


Figure 4. 2: Location of the Ngorongoro Sopa Lodge in relation to the nearest permanent accommodation facility and Lemala entrance gate into the Ngorongoro Crater

4.12. Current Waste Management Practice

4.12.1. Solid waste

Current practice of solid waste management undertaken by owners of accommodation facilities in the NCA is sorting according to type and keeping the same in separate containers at the site before disposing them off accordingly. Much of wet waste, which are, organic in nature particularly food leftovers are collected, wrapped in polythene bags and transported outside the NCA for feeding pigs particularly in Karatu area. Other operators bury the organic waste in deep holes covered with wire mesh or steel sheet to deter scavengers and are left to decompose.

Combustible waste including papers and cardboards is blazed on site in furnaces and non-decomposable ones, which are currently not recycled anywhere in the Arusha Region are stored at the site and later on transported and dumped at the Arusha City Landfill. The Lodge is granted with a solid waste disposal permit for dumping the same at the City's landfill, which is located at Muriet area within the city every year whereby landfill user charges are paid to the City Council. The solid waste disposal permit, for 2023/2024 was granted through a letter with reference number MA.155/411/24 dated 21st July, 2022 (Appendix 7). The type of solid wastes, which are currently recycled in the Region are transported and delivered to individuals or associations, which deal with recyclables. Hazardous waste mostly consisting of empty chemical containers, electronic remains and batteries are closed in separate big black plastic bags according to type

and once reasonable amount is accumulated, are transported to the City of Arusha and delivered to retailers for recycling or appropriate disposal.

4.12.2. Liquid waste

The wastewater from ablution, kitchen, laundry, bathrooms and that from toilets at the Ngorongoro Sopa Lodge since it was established in 1992, has been collected into several septic tanks and soak away pits adopted on the gradient using radiating arms. No recycling of wastewater was conducted at the Lodge because the original design did consider the option. According to an initial environmental audit that was conducted in 2015, the liquid waste management system was expensive and environmentally as well as ecologically unfriendly especially due to utilization of large amount of water, which was already scarce. The daily average discharge of wastewater ranged between 15,000-21,000 liters per day depending on the occupancy. This means that at full occupancy average wastewater generation per person was about 50 liters daily. The lodge has been increasing the number of soak pits because of the poor design of the waste system.

CHAPTER FIVE

5.0. STAKEHOLDERS' PARTICIPATION AND CONCERNS

5.1. Legal Requirement

Section 89 of EMA, Cap. 191 provides directives on public participation and its importance to the EIA study process. Regulation 17 of the EIA and Audit Regulations, 2005 provides detailed procedures for stakeholders' participation in the EIA process. In this perspective, stakeholders include all those people and institutions with interest in the successful design, implementation and sustainability of a particular project. Both categories of the people, be it the beneficiaries or the losers to a development project are considered to be stakeholders.

5.2. Consulted Stakeholders

Stakeholders who were consulted during both scoping and full EIA study exercise including the were pre-determined based on their close institutional and spatial relationship with the renovation works and proposed establishment of additional guest rooms. The stakeholders who were consulted and responded during both scoping and full EIA study include relevant staff from the Ngorongoro District Council, the National Commission for UNESCO, the Fire and Rescue Force, OSHA Northern Zone, the TMA and the Internal Drainage Basin Water Board. These were pre-determined based on their close institutional and spatial relationship with the ongoing and proposed works at the Ngorongoro Sopa Lodge. Whereas the Manager for Ngorongoro Sopa Lodge and the Site Engineer and his team who were at the site renovating the existing guest houses were also consulted, key written correspondences between the NCAA and the Proponent as provided in Appendices 1 and 2 were reviewed.

5.3. Summary of concerns and opinions of stakeholders

Major concerns and opinions, which representatives of these institutions shared with environmental experts are presented in Table 5.1 and their names, designations, institutions and signatures are shown in Appendix 9. Summary of concerns and opinions that were given include:

- (i) To be cautious with people who may enter into the NCA in pretence of seeking jobs particularly during renovation, reconstruction and construction works but eventually turn to be poachers and bandits;
- (ii) To refrain from using building materials and avoiding the technological design that will not blend well with the environment in order to preserve the site's scenic beauty;
- (iii) To circumvent from unnecessary cutting down of trees and vegetation clearance to prevent water run-off and the resulting erosion and sedimentation;
- (iv) To make sure that water abstraction and utilization do not disrupt natural flow and patterns;
- (v) To use energy sources, which area environmentally friendlier such as natural gas-run generators for lighting instead of the existing diesel machines, and liquefied petroleum gas for cooking;
- (vi) To adopt proper management systems for both solid and liquid waste using modern technology for the bio-digestors for anaerobic treatment of wastewater;

- (vii) To avoid introduction of alien plant species, which may interfere with growth patterns of indigenous plant species and ultimately weaken the ecological processes of the area;
- (viii) To cooperate with the NCAA to control poaching, illegal cutting of trees and livestock grazing in the NHFR;
- (ix) To intensify security at the Lodge by improving communication systems within the facility and among other stakeholders including the NCAA;
- (x) To construct structures at low profile and obscure light to avoid easy visibility of the Lodge structures from distant points and high elevations;
- (xi) To give priority to the local people from within Ngorongoro and nearby Karatu districts to employment both during construction and operation phases;
- (xii) To provide decent accommodation to employees and attractive terms of working environment;
- (xiii) To diversify income generation activities of the local people in particular and Tanzania citizens in general like buying available foodstuffs and building materials from Ngorongoro, Karatu and Monduli districts as well as Arusha city;

Table 5. 1: Specific concerns and the proponent's responses

S/N	Name	Designation	Institution	CONCERN/OPINION	PROONENT'S RESPONSE
1.	Benson Mhagama	District Environment Management Officer	Ngorongoro District Council	<p>(i) Concentration of developments and interference of wildlife migration routes may subsequently upset the natural living patterns of some wildlife species inside the NCA and force them to emigrate from the Conservation Area into settled areas and cause conflict with humans.</p> <p>(ii) Priority for employment should be given to people from the neighbouring communities both during construction and operation phases.</p> <p>(iii) Building materials and foodstuffs should be purchased locally from the neighbouring villages in the Ngorongoro and the nearby Karatu districts.</p> <p>(iii) To evade from poaching and criminal incidences, recruitment of employees at the construction site and operation of the facility should be done in collaboration with the NCAA Management and Village Councils where workers will come from.</p>	<p>(i) All Lodge structures shall be confined in a leased piece of land by the NCAA and the perimeter of the facility will not be fenced to allow free movement of animals. Visitors and employees shall be prohibited from harassing the animals found within and in the vicinity of the Lodge. Further, construction activities shall take place during day time to allow free utilization of the area by wildlife during the night when many species are active.</p> <p>(ii) The Proponent plans to employ all non-skilled workers from neighbouring communities both during construction. Should they have required qualification majority of the skilled employees shall also be recruited from the local community during both construction and operation phases.</p> <p>(iii) The Lodge Management shall provide avenue for income generating activities to neighbouring communities including the selling of foodstuffs to the facility, handicraft to tourist and training members of the community to serve as guides and interpreters when visitors pay visit to neighbouring villages. Building materials such as sand and stones will be purchased from the relatively nearby villages in Karatu</p>

				<p>(v) There is a risk of introducing alien plant species through importation of building materials particularly sand during construction as well as through food supply and introduction of ornamental plants. If not well screened, alien plants may interfere with growth patterns of indigenous plant species and ultimately weaken the ecological processes of the area.</p>	<p>and Monduli districts, cement blocks from Karatu Township and majority of the industrial materials will be procured from Arusha city as bulk purchasing pull price per unit down.</p> <p>(iv) Recruitment of employees from the community shall be done in consultation with the NCAA and respective Village Authorities to avoid individuals with offences' records.</p> <p>(v) Building materials especially sand shall be purchased from the well-known NCAA collection points where they will be thoroughly screened. Intensive screening of foodstuffs will be conducted before bringing them in the NCA and introduction of alien ornamental plants will be prohibited.</p>
2.	Hamisi Haruna	Safety and Health Officer	OSHA Northern Zone	<p>(i) High noise and vibration levels particularly to be generated by vehicles, a generator and construction equipment if not controlled may cause psychological and health problems to humans ranging from annoyance to heart diseases.</p> <p>(ii) Control excessive dust generation as it may adversely affect human health.</p> <p>(iii) Care should be taken to control accidents from construction equipment, which may sometimes be fatal.</p>	<p>(i) Modern machines and vehicles that generate low noise and vibration shall be used. Low-noise making, pollutant-free and natural gas-run generators shall be housed in a sound-proof room. The noise and vibration-measuring devices will be provided at the Lodge to control noise and vibration within the acceptable limits.</p> <p>(ii) Water sprinkling on cleared areas will be conducted particularly during dry season to reduce dust.</p> <p>(iii) The contractor shall provide and enforce the use of PPE during construction. A first aid kit and first aid providers from staff members shall be trained. A vehicle shall be stationed</p>

				<p>(iv) There is potential for disease transmission particularly HIV/AIDS to communities neighbouring the proposed development. HIV/AIDS incidences are reported to be high in many areas where human influx is very high. Diseases like upper respiratory system infection may also occur in areas where people are congested including the construction sites.</p> <p>(v) Potential for speeding vehicles to knock down people and wildlife and cause injuries and sometimes deaths particularly in areas with sharp corners.</p> <p>(vi) Accommodation facilities, meals, transport and medical services to be provided to employees should be favourable and remuneration should not be below levels provided by the Government.</p> <p>(vii) Energy sources such as wood and fossil fuels, which produce high level of pollutants, should be avoided in order to keep the environment as clean as possible.</p>	<p>full time at the site to transport casualties for incidents that cannot be handled at the site.</p> <p>(iv) Awareness on the negative impact of sexually-transmitted diseases especially HIV/AIDS shall be given to neighbouring residents, construction people and the Lodge employees. Condoms shall be provided at the construction camp and at the Lodge during operation. Sufficient tents shall be provided to accommodate workers during construction to limit congestion. Rooms for Lodge employees are relatively spacious, well-ventilated and designed to accommodate maximum of four people.</p> <p>(v) Awareness on the danger of over-speeding will be provided to drivers and those found driving beyond limits will be penalized.</p> <p>(vi) Decent accommodation facilities and favourable working environment will comply with Government directives and as provided in the Company's business plan.</p> <p>(vii) The major source of power for lighting, running water heaters and cold rooms as well as water pumping will be the natural gas-run generators that shall be backed by solar energy while the major source for cooking will be LPG, which is a relatively cleanest source and heating will be done by the bio-gas.</p>
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3.	Jeradi Nonkwe	Fire Officer	Fire and Rescue Force	(i) Architectural drawings must be submitted to the Fire and Rescue Force for approval before starting reconstruction of the demolished structures and construction of the proposed extension. Once construction is completed the Force must be informed for compliance inspection of the approved drawings and issuance of fire certificate.	(i) Architectural drawings of the modernized Lodge structure and the proposed new components will be submitted to the Fire and Rescue Force for scrutiny and approval.
4.	Salim Lyimo	Hydro-geologist	Internal Drainage Basin Water Board	(i) Drilling of the recommended borehole by the hydrogeological and geophysical survey and water use permit shall be sought from the Internal Drainage Basin Water Board. (ii) Water quality analysis must be conducted by an Authorized Water Quality Laboratory to determine if it conforms with the Tanzania standards.	(i) Borehole drilling and water use permit will be sought commensurate with the Water Resources Management Act, Cap. 331. (ii) Water quality analysis shall be conducted immediately after completion of water borehole drilling.
5.	Professor Hamisi M. Malebo	Executive Secretary	National Commission for UNESCO	(i) The World Heritage Convention and its Operational Guidelines do not prohibit development of facilities to cater for tourists. However, given the status of the NCA as a World Heritage Site, appropriate guidelines that should be observed for the purpose of maintaining the OUVs of the area,	(i) The recent Operational Guidelines for the Implementation of the World Heritage Convention (WC 23/01) were reviewed and complied with in the conduction of this EIA. (ii) The Guidance and Toolkit for Impact Assessments in a World Heritage Context (UNESCO, ICCROM, ICOMOS and IUCN, 2022) was one of the guiding instruments

				<p>which it is nomination dossier was prepared.</p> <p>(ii) In order to ensure there is no potential or ascertain impacts to the OUVs, it is advised to apply IUCN guiding note for the EIA and the International Council on Monuments and Sites (ICOMOS) guidelines for Heritage Impact Assessment to assist to gauge impacts in relation to the OUVs and thus easily inform on the extent of the impacts over the OUVs.</p> <p>(iii) Cross-check with the NCAA to establish if the NCA-GMP was shared with the UNESCO World Heritage Center. If shared it implies that the advisory bodies comment on the GMP and thus the zoning scheme and their applicability have consensus of all interested stakeholders including the UNESCO.</p> <p>(iv) All available secondary information should be exhausted to understand whether the area has any archaeological or paleontological materials.</p>	<p>that were used to conduct the EIA for the purpose of maintaining the OUVs of the NCA.</p> <p>(iii) The (2006-2016) NCA-GMP, which designated the site where the Ngorongoro Sopa Lodge as a Catchment Forest Zone was shared with the UNESCO during and after preparation. However, the Lodge was established in 1992 when, even the (1996-2006) GMP was not prepared yet. The reviewed GMP (2018-2028), which also designates the site as the Catchment Forest Zone is pending awaiting the approval by appropriate Authority, thus it is not yet shared with UNESCO.</p> <p>(iv) Available secondary information including but not limited to Leakey (1971); Leakey and Roe (1991); Bushozi (2013); Bower and Mabulla (2013); and Masao (2015) has been reviewed and none has shown evidence of the presence of any of the archaeological or paleontological materials at the Ngorongoro Sopa Lodge. Nonetheless, a Cultural Heritage expert from the NCAA shall be deployed to record any archaeological and paleontological materials that may be found.</p>
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CHAPTER SIX

6.0. ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES

6.1. Overview

Potential impacts during all phases of the project implementation have been considered based on concerns and opinions that were raised by stakeholders and experts' site visit, which was carried out to determine baseline information on the ecological, biophysical and social features. Decision on whether an identified impact was significant or insignificant depended on experts' judgment and information from literature with respect to more or less similar undertakings already in operation in the NCA and elsewhere inside and outside the country. Before embarking on the identification of the project impacts, the boundaries felt that might be affected by the proposed project were defined. Determination of boundaries during the EIA studies is an important stage in the identification of impacts and the establishment of levels to which the impacts will be felt. Three types of boundaries, which were considered in the current EIA study, are institutional, temporal and spatial.

6.2. Project Boundaries

6.2.1. Institutional boundary

Institutional boundary refers to the institutions within which the project interacts. These are determined by administrative structures, mandates, policies, laws and regulations. The proposed project touches interests of many institutions and administrative units both in Tanzania and outside the country. The major international organizations are the East Africa Community (EAC), UNESCO and Lusaka Agreement Task Force.

While one of the EAC objectives is to promote a sustainable growth and equitable development of Partner States including rational utilization of the region's natural resources and protection of the environment, the relevance of UNESCO to this project rests in the sense that the NCA, where the proposed development is to be undertaken is inscribed on the UNESCO's World Heritage Sites List. The Lusaka Agreement Task Force coordinates the collaborative efforts undertaken by Party States in carrying out investigations on violations of national laws pertaining to illegal trade in wild animals and plants.

Ministries in Tanzania with relevance to the proposed project are, the Natural Resources and Tourism; the Vice President's Office-Union Affairs and Environment; Water and particularly the Internal Drainage Basin Water Board; Energy; Land, Housing and Settlements Development; Finance and Economic Affairs particularly the Tanzania Revenue Authority (TRA); Prime Minister's Office (Local Government and Regional Administration), Community Development, Gender, Women and Special Needs, which is represented by OSHA in this case, and the Home Affairs and principally the Fire and Rescue Force. The key non-governmental stakeholders are the Tanzania Association of Tour Operators (TATO) and the Tanzania Association of Hoteliers (TAH). Although consultation was not done to people from all these key stakeholders both during scoping and full EIA study, those who were not contacted their operating guidelines were reviewed.

6.2.2. Temporal boundary

Temporal boundary refers to the lifespan and reversibility of impacts. When conducting the EIA study, such boundaries were categorized into two areas. One class referred to those activities, which cease to be impacts when a certain phase of implementation is completed or referred to as temporary impacts. The other type considered those, which stretch far into the future up the envisioned decommissioning phase and beyond the closure of the project referred to as permanent or long-term impacts. In view of that, it was essential to define temporal boundaries based on the duration of the project in question. This kind of a boundary considered the consequences of the project during all phases of implementation.

6.2.3. Spatial boundary

Spatial boundary is difficult to determine with precision but it is important to helping decide on how far from the site a certain impact may spread, either within, in the vicinity of the project area or beyond. The improved and expanded extent of Lodge may have wide ranging implications on the local, region and global environment, thus causing impacts at the site as well as far away from where the facility is located. The core impact area for the Ngorongoro Sopa Lodge, is the NCA, which endures relatively greater environmental costs particularly those related to waste generation and resources utilization mainly water but it also benefits relatively more than other institutions in terms of revenue collection.

An immediate impact area is situated outside the NCA and in the case of the Ngorongoro Sopa Lodge is the rest of the Ngorongoro District and neighbouring areas in Karatu District in particular and the whole of Arusha Region in general. The more outer spatial dimension of the project is the area of influence that consists of centres for decision making that may influence the development and operation of the facility and tourism in general in the country. These decision-making centres include Dar-es-Salaam and Dodoma; the commercial and capital cities of the country respectively.

Karatu where the headquarters of the NCAA is situated and Arusha city; the headquarters of the EAC as well as the major gateway for tourists visiting the attractions in the northern circuit. The headquarters and sub-office of the Consolidated Tourist and Hotels Investment are located in Nairobi and Arusha where decision made may influence the implementation of the project. Dar-es-Salaam and Paris in France where the Country Office and headquarters of UNESCO are located respectively may also influence decisions and activities that relate with the proposed development. The headquarter of the National Commission for UNESCO is also located in Dar-es-Salaam.

6.3. Potential Impacts of the Proposed Project

The proposed improvement and expansion of the Ngorongoro Sopa Lodge will undeniably cause positive and negative impacts to the environment, social economic development to both individuals and the country, and improve enjoyment and satisfaction to clients. The positive impacts that may emanate from renovation, reconstruction of the demolished structures and construction of the proposed new presidential suites at the currently undeveloped piece of land at the Ngorongoro Sopa Lodge will be contribution to reducing a gap that exists between the current supply and demand in tourist beds in the NCA; creation of employment and other income generating opportunities to the local people residing within the NCA and neighbouring areas;

increase in revenue to the Central Government, the Ngorongoro District Council and the NCAA through tax/levy/fee payments and improvement of security to surrounding areas due to presence of activities and human movements.

Nonetheless, the project if not well managed may cause negative impacts including but not limited to, soil erosion; water, soil and air pollution; interference with wildlife movement routes, dispersal areas and calving grounds; and introduction of invasive plant species that may negatively change habitat and species diversity. Other negative impacts may be overutilization of water with potential to disrupt natural water regimes and patterns; damage to the properties of the facility and immediate environment by wildfires; diseases transmission particularly Zoonotic and HIV/AIDS; and potential for increased poaching from human influx into the area. Table 6.1 shows the identified potential impacts; both positive and negative during different phases of project implementation and their levels of significance.

Table 6.1: Summary of the identified potential impacts and their levels of significance

ENVIRONMENTAL IMPACTS	Impact status	IMPACT RATING BY PHASES			
		Pre-construction Phase	Construction Phase	Operation Phase	Decommissioning Phase
Positive Impacts					
Prospects for employment and the subsequent reduction of poverty among neighbouring community	Direct, high magnitude and long-term	1	+2	+3	-3
Income generation opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu districts as well as the Arusha City	Indirect, low magnitude and long-term	1	+3	+2	-2
Improved security in neighbouring areas due to presence of renovation, reconstruction and construction activities as well as regular human and tourists' movements during operation	Direct, medium magnitude and long-term	1	+2	+2	-2
Increased quality accommodation facilities in the NCA	Direct, high magnitude and long-term	0	0	+3	-3

Opportunity for increased revenue to the NCAA, Ngorongoro and Karatu District Councils and the Central Government	Direct, high magnitude and long-term	0	+1	+3	-3
Negative Impacts					
Increased run-off and the resulting soil erosion and sedimentation caused by vegetation clearance	Direct, high magnitude and medium term	-1	-2	-1	+2
Overutilization of water and the potential to interrupt flow patterns and aquifers	Direct, high magnitude and long-term	0	-1	-2	+2
Injuries, which may sometimes be fatal to people and wildlife by construction equipment and speeding vehicles	Direct, moderate magnitude and short-term	-1	-2	-2	+1
Potential for increased poaching and criminal incidences due to swollen human influx	Direct, moderate magnitude and long-term	-1	-2	-2	-1
Potential for human attack by wild animals	Direct, low magnitude and long-term	-1	-2	-2	0
Effect of noise to humans and wild animals	Direct, low magnitude and long-term	-1	-2	-2	+1
Effect of vibrations to humans and wild animals	Indirect, low magnitude and short-term	-1	-2	-1	0
Effect of dust to humans, wild animals and plants	Direct, moderate magnitude and long-term	-1	-2	-2	+1
Interference with wildlife dispersal areas and calving grounds	Indirect, moderate magnitude and long-term	0	-2	-2	+1
Introduction of invasive plant species that may negatively change habitat and species diversity	Direct, high magnitude and long-term	-1	-2	-2	+2
Spread of communicable diseases including those, which are sexually-	Direct, low magnitude and long-term	0	-2	-2	+1

transmitted particularly the HIV/AIDS					
Contamination of soil as well as surface and underground water by human waste and sewage	Direct, high magnitude and long-term	-1	-2	-3	+1
Contamination of soil as well as surface and underground water by oil and fuel.	Direct, high magnitude and long-term	-1	-3	-2	+1
Generation of solid waste and the subsequent creation of awful smell, eyesore and breeding sites for disease vectors	Direct, high magnitude and long-term	-1	-2	-3	+2
Reduced soil cover and the resulting wind and gully erosion by firewood collection for cooking and heating	Indirect, low magnitude and short-term	-1	-2	0	0
Potential for damage of the Lodge properties and surrounding environment by wild and in-house fires including electrical faults	Direct, low magnitude and long-term	0	-2	-2	0
Air pollution by smoke and greenhouse gases	Direct, high magnitude and long-term	-1	-2	-2	+1
Potential for transmission of Zoonotic diseases	Indirect, low magnitude and long-term	-1	-2	-2	0
Rise in the cost of living to neighbouring communities due to influx of people	Indirect, low magnitude and long-term	0	-1	-1	0
Change in traditional norms and customs of communities residing relatively closer to the proposed facility	Direct, low magnitude and long-term	0	0	-1	+1
Visual impacts from disorganised keeping of building materials, disposal of rubble and using non-environmental blending building materials	Direct, low magnitude and short to long-term	0	-2	-2	+1

Cumulative effect of the solid and liquid from additional structures at the existing Lodge	Direct, high magnitude and long-term	0	0	-3	+2
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Key: very high negative impact (-3), high negative impact (-2), minor negative impact (1), no impact (0), minor positive impact (+1), high positive (+2) and very high positive impacts (+3).

Source: Environmental experts’ assessment (August, 2024)

6.4. Project Alternatives

In the process of conducting the EIA study, it is important to consider different alternatives, which may achieve more or less similar objectives to the proposed option. Consideration of the project alternatives is vital to ensuring that the proponent and decision-makers have a broader base from which they can choose from, the most suitable preference. When considering the proposed project alternatives, it is also advised to include a consideration on what would happen without the project in place, that is, the “no project option”. Alternatives, which were considered in this EIA study and considered the environmental, socio-economic and viability aspects are, the “no project”, size, design, location and technology, which are discussed in subsections 6.3.1 through to 6.3.5.

6.4.1. No Project Alternative

The assumption that was considered in this alternative is that, the proposed reconstruction of the demolished structures and construction of the proposed new presidential suites and their associated amenities at the Ngorongoro Sopa Lodge will not be carried out at all. The EIA study revealed that the Government in general and the NCAA in particular are encouraging private investors in the hospitality industry to establish or improve and expand the existing accommodation facilities to internationally-accepted and standard level to bridge a gap between the current supply and demand of tourist beds in the NCA but, which will cause insignificant impact on the environment. With the no project alternative therefore, the goal of increasing tourist beds in the NCA will not be realized.

Whereas establishment of standard accommodation facilities inside the NCA will reduce fatigue on visitors driving from outside to access attractions in the Area, visitors will fulfil their aspiration of spending the night in the midst of attractions i.e., wildlife and wilderness that motivate them to visit the NCA. The facility will also increase income to the NCAA and ultimately contribute to the economic growth of the country as well as raise revenue to the Ngorongoro and the neighbouring Karatu District Councils through hotel levy payments and other multiplier activities.

6.4.2. Size alternative

The proposed development is to improve and expand the already existing relatively larger facility but designed to offer a calm-bushy and exclusive environment. The alternative for the proposed project could be the establishment of a new smaller facility at a different site from where the Ngorongoro Sopa Lodge is located that would accommodate fewer visitors than what is being proposed. Although the expansion of an existing comparatively bigger accommodation facility will require more space to accommodate more guests, other structures and services like the staff

and tourist driver guides village; the laundry and the workshop will either remain the same or involve few improvements therefore save space, which would otherwise have been needed to establish the same if a new smaller facility would have been planned at a different location.

The time period to facelift the existing larger facility will not deviate much from that that should be spent to establish a smaller facility. This means new sources of resources for construction works such as water need to be explored for the new site, which may be challenging especially in the NCA where the resource is already scarce. Impacts for improvement and expansion of a larger facility where management has already established good systems for management of waste both solid and liquid will be concentrated at one location than would have been for opening up a new site for establishment of a new and relatively smaller facility.

While mitigation measures and enforcement of the ESMP compliance will be easier for one large facility during both construction and operation phases, in total a proportion of land area to be covered by the accommodation structures will be small compared to, if the same number of beds to be added would have to be fulfilled by smaller facilities as it will need more land for associated components.

6.4.3. Design alternative

According to the NCAA-Private Concession Policy, Strategy and procedures (2019-2024), four categories of accommodation facilities, which are recognized as more or less permanent include the Lodge, PTC, Semi Permanent Tented Camp and the Seasonal Camp. These categories are differentiated based on the land lease tenure instead of design. Land lease period for a lodge is 33 years, for a PTC is 15 years, for a semi-permanent tented camp is 10 years and for a seasonal camp is 3-4 months within Ndutu area and 3-9 months around the Ngorongoro crater rim.

The Land lease agreement for the site where the Ngorongoro Sopa Lodge is located was signed in 1990s and renewed in 2023, with the exception of improving internal services such installation of modern facilities in toilets and kitchen as well as regular renovations, the design of the Lodge has remained and will continue to remain more or less with its original. The main house and guest rooms' circular-shaped structures with sloping roofs were adopted to symbolize unity and embrace the circular style of the traditional homesteads for the inhabitants of the NCA and other natural features located in the boundaries of the Area, which look more or less rounded like the circular shape of the Ngorongoro crater floor. Such a design has been appreciated by majority of visitors to the facility for over thirty years of its operation and thus felt it important to maintain it with some few improvements.

To avoid disaster that may burn down all the structures in case of in-house fires that might originate from electrical faults or accidental ignition from the LPG, the demolition main house that will be reconstructed and the proposed one to be constructed at the land earmarked for presidential suites, and all guest units are separated from one another to reduce the probabilities of blazing down all the possessions, if they were clustered under one roof. The design of scattering structures also reduces easy visibility from great distances or from vantage points either inside or outside the NCA and therefore retains the scenery as natural as possible compared to a design of having all the main houses and guest rooms connected in series, which

is typical to a hotel design. Further, the adopted design offers more privacy to occupiers than if the rooms were to be connected in serially style.

6.4.4. Location alternative

Although majority of the respondents acknowledged that the facility is well located and offers the most sought safari destination to foreign tourists including its closeness to Lemala Gate where the terrain is gentle to enter and exit the Ngorongoro crater floor, they argued that there should not be more accommodation facilities around the crater rim to reduce pressure on the well-known and unique Ngorongoro caldera. Those who aired their views felt that the more the visitors are accommodated on the rim, the more waste generation and utilization of natural resources particularly water, which is already scarce in the NCA in general and at the Ngorongoro Sopa Lodge in particular, the more the Crater loses its natural beauty and prominence. Other people suggested that if the bush experience was the one being sought, the new guest rooms and associated amenities proposed to form part of the Lodge extension should be developed in other areas outside the NCA, which provides more or less similar attractions.

Despite the above feelings, the EIA study established that, majority of visitors to the NCA are interested to spend their night close to where the attractions particularly wild animals and the wilderness that prompt them to visit the Area are found. Further that, prospective visitors need to spend their nights in the accommodation facilities with many years of Sopa lodges branding even if it was to spend more. The establishment of the new presidential lodges will be confined within the 13.5-acre piece of land already leased to the investor. Other structures that existed at the site for more than 30 years are either being renovated and a few will be demolished and reconstructed. The project aims at improving the services to realize visitors' enjoyment and satisfaction without compromising the conservation interests that have been preserved for many years. Increased visitor beds will also contribute to the reduction of a gap between the existing and requirements of beds without opening up another site, which will spread impacts to other areas of the NCA.

6.4.5. Project Utilities Alternatives

Water shall be sourced from drilled borehole onsite once drilling permit is obtained by the proponent from Interna Drainage Water Board (IDWB), however alternatively the proponent shall harvest rainy water but also recycling wastes water and reused in areas such as car wash, this shall minimize the utilization of underground water. The source of energy shall be electricity from Solar panels but alternatively the proponent shall use back-up generator which shall be runed by gas. All these sources shall be used in order to minimize utilization of one mode of power. Waste water shall be handled through biodigester treatment plant however French drain system will be an alternative.

6.4.6. Technological alternative.

Technological alternative basically considered wastewater disposal systems and roofing materials.

➤ Wastewater management systems

Option one, considered the wastewater recycling and activated sludge process, which is a technology that involves membrane bi-reactor that provides dynamic mixing of air and water for

excellent oxygenation and finally produces water that will contain low levels of organic material or suspended matter. The hydrolysed sludge in this technology will be passed through a flash tank and then to a bio-digester (anaerobic digestion), where the bacteria convert dissolved oxygen matter into biogas. The end result of this system is either (i) to release the biologically cleansed waste into the subsoil through French Drain System for further purification or (ii) into an open area, thus creating a man-made wetland or (iii) recycling it for use in non-human consumption activities. The second option is the traditional system, which is currently employed at the Ngorongoro Sopa Lodge where wastewater is passed through impermeable septic tanks for oxidation and thereafter released into the soak away pits for slow infiltration under the ground.

In both major systems that is anaerobic digestion and soak away pits, the wastewater to be generated in kitchens will pass through a separator chamber to isolate the fat, and allow the non-fat dirty water to join the sewage from other sources and flow in septic tanks. Whereas the soak away wastewater management system could be environmentally appropriate where the soil type is sandy stone for easy percolation and also where the availability of water is plentiful, at the Ngorongoro Sopa Lodge site, which is characterized by the volcanic soil, the wastewater management has been unsuitable environmentally, ecologically and economically.

According to an initial environmental audit that was conducted in 2015, it was noted that the lodge management continued to establish new soak pits because of the poor design of the waste system. Leakage was observed in some places especially on the back of rooms when connecting to some manholes. As a result, water recycling for use in non-human consumption activities like garden irrigation and cleaning to reduce high rate of water utilization was recommended. Until the Lodge was closed down for renovation, upgrading and construction of the proposed new components, the soak way pits disposal system for wastewater was still in use. Realising water in man-made wetlands is not feasible inside the NCA as may cause irreversible effect to the wildlife health and behaviour due to open accessibility for drinking and wallowing. Passing the cleansed water through the Poly Vinyl Chloride (PVCs) into French drains and finally releasing the treated water into the subsoil will not solve the challenge of large amount of water utilization.

The alternative of cleansing wastewater using the bio-digester technology and recycling the clean water for use in non-human consumption activities is therefore recommended at the Ngorongoro Sopa Lodge. The system also provides opportunity for producing biogas (methane) that may be used in heating and the bio-fertilizer for replenishing the soil fertility. The technology will reduce clean water consumption thus, live some for the maintenance of the ecosystem and also reduce the cost of drawing and hauling water from the surface and sometimes from long distance from the old NCA headquarters, which is located about 35km from the Lodge.

➤ **Roofing materials**

Six alternative types of roofing materials were considered for the ongoing facelift, the proposed reconstruction of the demolished main house and the construction of the proposed new presidential wing at the Ngorongoro Sopa Lodge, which are:

- (i) **Asphalt shingles:** This type is effective in all environmental conditions; which quality varies widely but are quite expensive.
- (ii) **Metal roofing:** The metals come in vertical panels or shingles resembling slate, tile and shake, which can last 50-70 years. Metal excels at sloughing off heavy snow and rain, do not burn and it resists high winds. It is lightweight and low maintenance compared to roofs of other materials. However, metal can be noisy during rainstorms. Metal roofs vary in quality of material and cost.
- (iii) **Slate:** Slate roofing can last more than 100 years. It never burns, is waterproof and resists mould and fungus. Slate is effective in wet climates but is very expensive, heavy and may be easily broken when stepped on.
- (iv) **Clay and concrete tiles:** Clay and concrete roof tiles can withstand damage from tornadoes, hurricanes or winds up to 125 miles per hour and even earthquakes. However, they may require extra support to bear their weight and they are likely to break when walked on. Clay and concrete tiles reflect their durability with a higher cost.
- (v) **Corrugated iron sheets:** Green coloured roofs topped with thatch grass to blend structures with the environment often improve air quality, reduce water runoff and insulate buildings to reduce heat. However, they need extra structural support, a vapor barrier, thermal insulation, waterproofing, drainage, water filtration, soil, compost and plants. The cost of this type of roofing material rise with the “intensive” version, which includes a more in-depth process.
- (vi) **Built-up roofing:** This heavy roofing consists of layers of asphalt, tar or adhesive topped with an aggregate and is the most common style for flat roofs. As you might expect for a design used on flat roofs, built-up roofing is great for waterproofing and is also fire resistant. The cost often varies depending on the slope and pitch of the roof.

Based on longevity, durability, environmental friendliness and good outlook, majority of the structures at the Ngorongoro Sopa Lodge are roofed with slate, which may last for more than 100 years, never burns, are waterproof and resists mould and fungus. Some of the guest units, which were under renovation when environmental experts visited the site are flat-roofed and therefore consist of built-up roofing that is considered appropriate because the technology is good for water-proof and is fire resistant. Roofs for the staff and driver guides’ houses and the workshop are covered with thatch grass on top of corrugated iron sheets to blend structures with the environment. Topping the buildings with thatch grass aims at improving air quality, reducing water runoff and insulating the buildings to reduce heat. The proposed new presidential suites should therefore involve the built-up roofing design and the new main house with its associated amenities should be roofed with slate to maintain uniformity.

CHAPTER SEVEN

7.0. POTENTIAL ENVIRONMENTAL IMPACTS AND TH PROPOSED MITIGATION MEASURES AND ENHANCEMENT ACTIONS

7.1. Significant impacts and recommended mitigation and enhancement actions

Table 7.1 shows significant impacts of the respective project; both negative and positive, which mitigation measures and enhancement actions respectively are recommended during all phases of the project implementation. Significant impacts are those rated very high negative impact (-3), high negative impact (-2), high positive (+2) and very high positive (+3) as indicated in Table 6.1. It should be noted that all activities during pre-construction phase were perceived to either have no impact (0), or have minor negative (-1) or minor positive (+1) and therefore no mitigation measures and enhancement actions are proposed.

Nonetheless, some of the impacts that were rated at -1 and +1 are discussed under cumulative impacts since they could be insignificant when they are considered independently but become adverse or beneficial when they are treated collectively. Impact mitigation involves a wide range of measures proposed to prevent, reduce and remedy to acceptable levels or compensate for each of the adverse impacts evaluated as significant negative or enhancement activities for those evaluated as positive during all phases of the project implementation.

Table 7. 1: Potential environmental impacts and proposed mitigation measures

Identified Impact	Mitigation/Enhancement Measures
Renovation, re-construction and construction phases	
Positive impacts	
Prospects for employment and the subsequent reduction of poverty among neighbouring community	<ul style="list-style-type: none"> • Employment opportunities for unskilled as well as skilled personnel whenever available shall be given to people from neighbouring communities. • Employment shall consider gender and where appropriate females with same qualifications as males will be given priority. • Employees shall be paid reasonable wages and the Proponent shall abide to all terms of employment as provided in the operating polices.
Income generation opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu districts as well as the Arusha City	<ul style="list-style-type: none"> • People from the local community shall be encouraged to produce quality farm products for supplying the renovation, re-construction and construction teams. • Available local building materials such as sand and stones shall be purchased from villages in the neighbouring Karatu District and majority of the industrial materials shall be procured from Arusha city.

Improved security in neighbouring areas due to presence of renovation, re-construction and construction activities	The NCAA shall be advised to introduce an incentive package for any person residing in the NCA who will help to arrest poacher(s) and criminal(s) prior to such incidents taking place.
Negative impacts	
Increased run-off and the resulting soil erosion and sedimentation caused by vegetation clearance	<ul style="list-style-type: none"> • Reconstruction and construction activities shall take place end of rainy season or during dry season. • Truck movement shall be confined to designated tracks. • Adequate open channels shall be provided to collect storm water. • Vegetation clearance shall be limited to unavoidable situations.
Injuries, which may sometimes be fatal to people and wildlife by construction equipment and speeding vehicles	<ul style="list-style-type: none"> • Construction workers shall be given PPE including heavy boots, pair of overalls, helmets, hand gloves, eye shields, earmuffs and mouth masks to reduce chances of accidents and injuries. • The use of the PPE shall be enforced. • A first aid kit shall be provided at the construction site. • First aid providers from within the construction team shall be trained. • Road bumps shall be placed at regular distances along the road that accesses the site to control speed. • Speeding drivers shall be warned and penalized. • Clear procedures on how to coordinate emergency evacuations will be posted at the construction site. • Supervisors shall be trained on how to coordinate emergency evacuations.
Potential for increased poaching and criminal incidences due to swollen human influx	<ul style="list-style-type: none"> • The NCAA and the village leaders from where potential workers will come from shall be involved in scrutinizing and screening candidates applying for employment. • A copy of a list of names with their photographs of the people involved in renovation and construction activities shall be submitted to the NCAA and respective villages where they come from. • A photograph of any employee resigning or expelled from employment shall be surrendered to the NCAA Protection Department. • All employees involved in renovation and construction works shall be given temporary identity cards and required to carry them all the time in particular when out of the construction site. • Close cooperation with other Proponents in the NCA, the Police force and rangers from the NCAA to fight insecurity incidents in the area is, and shall continue to be a priority.

	<ul style="list-style-type: none"> • Armed security guards from a registered security and reputable company are, and shall continue to be recruited to collaborate with local guards to prevent poaching and banditry. • Roll-calls for the renovation and construction personnel shall be taken every morning before the work starts and tonight before they go to bed to ensure that all the people are at the construction camp all the time.
Potential for human attack by wild animals	<ul style="list-style-type: none"> • The NCAA shall be requested to station a ranger at the construction camp most of the time. • Workers shall be prohibited from feeding and disturbing wild animals. • Walking beyond the construction camp premises at any time shall be prohibited.
Effect of noise to humans and wild animals by construction vehicles and other equipment	<ul style="list-style-type: none"> • Renovation and construction activities shall take place during day time only and leave wildlife free during the night when many species are active. • Modern machines and vehicles that generate low noise shall be used. • The renovation and construction teams shall be required to keep noise as low as possible when on site.
Effect of vibrations to humans and wild animals by construction vehicles and other equipment	<ul style="list-style-type: none"> • Renovation and construction activities shall take place during day time only and leave wildlife free during the night when many species are active. • Modern machines and vehicles that generate less vibrations shall be used.
Effect of dust to humans, wild animals and plants	<ul style="list-style-type: none"> • A bowser shall be provided to sprinkle water on cleared sites and tracks in order to reduce dust. • Bumps shall be erected along an access road to the site to minimize dust that may be generated by speeding vehicles. • Masks shall be provided to the construction people to prevent them from dust effects.
Interference with wildlife dispersal areas and calving grounds	<ul style="list-style-type: none"> • The renovation and construction camp shall not be fenced to allow free movement of animals. • The renovation and construction people shall be prohibited to feed and harass the animals • The renovation and construction people shall be required to keep noise as low as possible. • The NCAA shall be requested to station a ranger at the construction site to enforce the Authority's regulations.
Introduction of invasive plant species that may negatively change habitat and species diversity	<ul style="list-style-type: none"> • Collection of building materials from areas invaded by alien plant species shall be avoided and close screening shall be done before importing the material to the site. • During re-planting, only indigenous plant species shall be planted. • In cooperation with the NCAA all identified alien plant species shall be removed.

	<ul style="list-style-type: none"> • Seedlings for ornamental plants raised in the Lodge nursery shall be those, which are indigenous to the NCA only.
Spread of communicable diseases including those, which are sexually-transmitted particularly the HIV/AIDS	<ul style="list-style-type: none"> • Professionals from OSHA shall be invited to provide safety and health awareness training to workers putting emphasis on communicable diseases in particular HIV/AIDS and other sexually transmitted diseases. • Workers shall be encouraged to voluntarily test for HIV/AIDS. • Adequate protective gear particularly condoms shall be provided at the renovation and construction camp. • Hygiene and cleanliness shall be given priority and enough sleeping tents shall be provided to avoid congestion.
Contamination of soil as well as surface and underground water by human waste and sewage	<ul style="list-style-type: none"> • Long pit latrines are available at the renovation and construction site and wastewater from showers shall continue to be directed in those pits through a pathway screed with cement. • Disinfectants that kill disease vectors such as flies, inhibit offensive odour and repel houseflies is, and will continue to be sprayed regularly in the pit latrines to kill germs and bacteria. • Pit latrines shall be covered at the end of the construction phase.
Contamination of soil as well as surface and underground water by oil and fuel.	<ul style="list-style-type: none"> • Regular inspection of construction vehicles and other equipment shall be done to control accidental oil and fuel spillage and leakages. • A drum shall be provided at the construction site to store used oil. • The accumulated oil shall be collected, transported and delivered to bitumen manufacturers in the city of Arusha.
Generation of solid waste and the subsequent creation of awful smell, eyesore and breeding sites for disease vectors	<ul style="list-style-type: none"> • Containers for collecting different types of solid waste shall be provided at the construction site and sorting done immediately after the rubbish is generated. • Burnable waste shall be burnt immediately in the furnace to be constructed at the camp. • Decomposable waste such as food leftovers shall be buried in deep holes covered with wire mesh to prevent scavenges and left to decompose. • Non-decomposable waste which area currently not recycled anywhere in Arusha Region shall be transported and disposed-off at the Muriet dumping site, which is managed by Arusha City Council. • Recyclable and hazardous waste shall be transported to Arusha city and delivered to organized groups dealing with recycling or to retailers for recycling or appropriate disposal. • Disinfectants that kill disease vectors such as flies, inhibit offensive odour and repel houseflies will be sprayed regularly at the garbage sorting area to kill germs and bacteria.
Reduced soil cover and the resulting wind and gully erosion by	<ul style="list-style-type: none"> • The LPG will be the major energy for cooking at the construction camp.

firewood collection for cooking and heating	<ul style="list-style-type: none"> • The existing generators provides and will continue to be the major source of power for lighting and construction works during renovation, reconstruction and construction phases.
Potential for damage of the Lodge properties and surrounding environment by wild and in-house fires including electrical faults	<ul style="list-style-type: none"> • Fire extinguishers are, and will continue to be placed strategically at fire hazard areas and all majority of workers at the construction site will be trained on how to operate them. • Buckets painted in red color and containing sand shall be placed at the parking area and walk ways. • Necessary servicing of the fire extinguishers shall strictly be observed to make sure they are ready for use all the time. • An assembling point shall be known, placed with signage and easy to access in case of emergency and particular the fire. • Designated smoking areas shall be provided and known to the all employees at the construction camp, thus smoking in areas with high fire risk shall be prohibited. • Electrical wiring system shall be inspected regularly to detect potential electrical faults. • Training to workers in firefighting, disaster preparedness, mitigation skills and fire drills shall be conducted pursuant to the laid down schedule.
Air pollution by smoke and greenhouse gases	<ul style="list-style-type: none"> • The major source of power for lighting shall be LNG -run generators. • The generators shall be stored in sound-proof rooms with thick walls. • Cooking will be done using the LPG. • Burnable waste will be blazed in a furnace with smoke outlets positions above all other structures at the lodge instead of burning in the open air.
Potential for transmission of Zoonotic diseases	<ul style="list-style-type: none"> • Feeding of animal shall be prohibited. • All food remains shall be collected and kept in appropriate containers to avoid scavenging. • Domestic animals shall not be allowed at the renovation and construction camp.
Visual impacts from disorganised keeping of building materials and disposal of rubble	<ul style="list-style-type: none"> • A store built with corrugated iron sheets both for the walls and the roof and painted with green colour is in place and shall be maintained throughout the renovation, reconstruction and construction stages for storing building materials . • Rubble from the demolished structures shall be crushed at the already installed crusher to produce concrete blocks and paves • Other redundant building materials shall be removed from the site immediately after generation and disposed-off as appropriately as possible outside the NCA.
Operation phase	
Positive impacts	

<p>Prospects for employment and the subsequent reduction of poverty among neighbouring community</p>	<ul style="list-style-type: none"> • Individuals from within the Ngorongoro District and from the relatively closer villages in Karatu District with requisite qualifications shall be given priority for employment. • Trained Village Game Scouts shall be considered to guide and guard guests when on walking safaris in the NCA. • Employment shall consider gender and where applicants will have same qualifications females will be given priority. • Employees shall be paid reasonable wages and according to terms and conditions as provided in the Employment Policy and the Employment and Labour Relations Act. • A motivation scheme to rewarding the most compliant Lodge staff shall be established. • On job training on different skills shall be provided to employees to advance their qualifications.
<p>Income generation opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu districts as well as the Arusha City</p>	<ul style="list-style-type: none"> • People from the local community shall be encouraged to produce quality farm products such as vegetables, fruits, meat, milk and eggs for the Lodge supplies and handicraft products for sale to visitors. • Training shall be provided to volunteers from the local community on guarding and providing interpretative services. • Other essentials for the operation of the Lodge such as equipment for sanitary shall be purchased from business people at the Karatu Township, which is the headquarters of Karatu District.
<p>Improved security within the Lodge premises and neighbouring areas due to regular movements of workers and tourists</p>	<ul style="list-style-type: none"> • The presence of staff and tourists at the Lodge shall be sustained for the purpose of minimizing the chances of poaching incidents and boosting security in surrounding areas. • There shall be a budget for motivating the Lodge employees who will help to apprehend poachers and other criminals before the incidences take place.
<p>Increased quality accommodation facilities in the NCA</p>	<ul style="list-style-type: none"> • Collaboration with other actors particularly the NCAA shall be enhanced to ensure that international standard services including good roads, reliable security and other utilities such as water and electricity are sustainably provided. • The presence of staff and tourists at the Lodge shall be sustained to minimize chances of poaching incidents and boosting security in surrounding areas.
<p>Opportunity for increased revenue to the NCAA, Ngorongoro and Karatu District Councils and the Central Government</p>	<ul style="list-style-type: none"> • Visitor and revenue records shall be prepared as appropriately as required and reports submitted regularly to the NCAA, the Ngorongoro District Council and the TRA. • Taxes, fees and levies shall be paid as appropriately as required to respective authorities. • Available tourist attractions within the NCA and surrounding areas and well as services provided at the Ngorongoro Sopa Lodge shall

	<p>be marketed vigorously to convince guests stay more days at the Lodge in particular and in the Conservation Area in general.</p> <ul style="list-style-type: none"> • Fee for disposing waste at the Muriet dumping site shall be paid to the Arusha City Council per prevailing regulation to boost its income. • Corporate social responsibility to the neighbouring local communities shall be executed in order to motivate people to appreciate the presence of the facility in their neighbourhood.
Negative impacts	
Overutilization of water and the potential to interrupt flow patterns and aquifers	<ul style="list-style-type: none"> • Underground water from a deep borehole shall be the major source for operation of the Lodge. • Water saving appliances shall be installed particularly in toilets, taps and showers. • Re-using towels and bed sheets shall be encouraged to reduce water utilization in the laundry. • Rain water shall be harvested to complement water from the borehole. • The biologically cleansed water shall be recycled for use in non-human consumption activities. • Drip irrigation to the lawn and garden shall be adopted instead of the traditional sprinkler system. • Introduce of meter reading shall be enhanced to control unnoticed overutilization of water that might be caused by undetected leakage.
Injuries, which may sometimes be fatal to people and wildlife by speeding vehicles	<ul style="list-style-type: none"> • Bumps shall be placed at regular distances along the track going to the Lodge to control speed. • Speeding drivers beyond limits shall be warned and penalized as appropriately as the existing regulations.
Potential for increased poaching and criminal incidences due to swollen human influx	<ul style="list-style-type: none"> • Regular collaboration with guards and game scouts employed by other Proponents in the NCA and rangers from the NCAA shall be enhanced for conducting patrols. • Armed guards provided with radios for communication shall be recruited from a registered and reputable security company and stationed full time at the Lodge to cooperate with individuals from the local community. • All employees at the Lodge shall be issued with identity cards and a list of names and their photograph submitted to the NCAA. • Lodge employees shall be required to carry their identity cards particularly when are out of the Lodge. • Employees shall be required to report to the Lodge Management all observed and doubtful movements of people within the NCA.
Potential for human attack by wild animals	<ul style="list-style-type: none"> • Workers shall be required to neither feed nor disturb wild animals. • Walking beyond the Lodge premises at any time shall be prohibited. • Enough but obscured lights shall be provided along a road that stretches between the main houses and the staff/ tourist driver guides' quarters.

	<ul style="list-style-type: none"> • The entrance/exist gate shall be provided with hand-held radio for full time communication with head security services' unit at the Lodge.
Effect of noise and to humans and wildlife by tourist vehicles and generators	<ul style="list-style-type: none"> • The existing diesel-run generators shall be replaced with modern liquified natural gas-run generators that generate low noise. • The generators shall be kept in thick-walled sound-proof rooms.
Effect of dust to humans, wild animals and plants	<ul style="list-style-type: none"> • Speed bumps shall be placed along the road accessing the Lodge to minimize dust generation. • Heavy penalties shall be imposed to the Company drivers found driving beyond the NCA speed limit.
Interference with wildlife dispersal areas and calving grounds	<ul style="list-style-type: none"> • The Lodge shall not be fenced to allow free movement of animals. • Majority of structures located on inclined slope shall be raised above the ground on concrete plinths to allow free movement of small creatures. • Outdoor lights shall be fade and down-casted to reduce direct illumination. • Visitors and Lodge employees shall be prohibited from feeding and harassing animals.
Introduction of invasive plant species that may negatively change habitat and species diversity	<ul style="list-style-type: none"> • Close screening of foodstuffs prior to bringing them into the NCA shall be instituted. • No introduction of ornamental plants shall be allowed at the Lodge. • All exotic seedling in the Lodge tree nursery shall be eradicated. • In cooperation with the NCAA, all identified alien plants seen in the vicinity of the Lodge shall be removed.
Spread of communicable diseases including those, which are sexually-transmitted particularly the HIV/AIDS	<ul style="list-style-type: none"> • Professionals from the OSHA shall be invited to provide safety and health awareness training to workers putting emphasis on communicable diseases in particular HIV/AIDS and other sexually transmitted diseases. • Workers shall be encouraged to voluntarily test for HIV/AIDS. • Adequate protective gear particularly condoms shall be provided at the Lodge. • Sleeping rooms for the Lodge staff and tourist driver guides shall be spacious and designed to accommodate maximum of four people to avoid congestion.
Contamination of soil as well as surface and underground water by sewage	<ul style="list-style-type: none"> • The use of low phosphate soaps and application of appropriate concentrations of caustic soda shall be adopted to prevent failure in the infiltration system due to soap scum build up and therefore prevent over flow and surface pollution. • Wastewater from kitchens shall initially pass through a separator to isolate floating fat before allowing it to enter the main route for biological cleansing. • The cleansed water shall be recycled for use in non-human consumption activities.

	<ul style="list-style-type: none"> • The Lodge architectural design provides proper channels for storm water to flow towards areas covered with natural vegetation to avoid mix up with wastewater in case of leakage.
Contamination of soil as well as surface and underground water by oil, fuel and chemicals.	<ul style="list-style-type: none"> • Tour operators shall be advised to conduct regular inspection of vehicles to control accidental oil and fuel leakages. • A drum shall be provided at the workshop to store used oil. • The accumulated oil shall be collected, transported and delivered to bitumen manufacturers in the city of Arusha by licensed Company. • Laid down procedures for handling chemicals particularly in the laundry room shall be displayed at a conspicuous location and the staff required to observe them.
Generation of solid waste and the subsequent creation of awful smell, eyesore and breeding sites for disease vectors	<ul style="list-style-type: none"> • Sorting the waste into different types and stored in different containers at the site shall be conducted. • Wet waste shall be buried in deep holes covered with steel sheet to prevent scavengers with a door on top for dropping the garbage and left to decompose. • Non-decomposable wastes, which are not currently recyclable elsewhere in the region shall be transported and dumped at the Muriet dumping site located and owned by the Arusha City Council. • Recyclable waste like plastic and glass bottles as well as hazardous waste shall be delivered to retailers in the city of Arusha for recycling or appropriate disposal. • Filtered water shall be provided in re-usable glass bottles and refilled every morning to reduce the generation of plastic bottles. • Staff and tourist driver guides' canteen shall be provided with filtered water to discourage use of plastic bottles. • Disinfectants that kill disease vectors, inhibits offensive odour and repels pests will be sprayed regularly at the garbage sorting area to kill germs and bacteria and inhibit bad smell.
Potential for damage of the Lodge properties and surrounding environment by wild and in-house fires including electrical faults	<ul style="list-style-type: none"> • Fire extinguishers shall be placed strategically at fire hazard areas and all staff members will be trained on how to operate them. • Buckets painted in red color and containing sand shall be placed at but not limited to the parking area, walk ways, generator houses and kitchens. • Necessary servicing of the fire extinguishers shall strictly be observed to make sure they are ready for use all the time. • Fire blankets shall be provided in kitchens and in all guest rooms. • Guests shall be provided with a clear notice and signs of accessing the emergency assembly area in case of a fire. • Designated smoking areas shall be provided and known to the Lodge occupiers thus, smoking in areas with high fire risk including inside guest rooms shall be prohibited. • Electrical wiring system shall be inspected regularly to detect potential electrical faults.

	<ul style="list-style-type: none"> • Training to workers in firefighting, disaster preparedness, mitigation skills and fire drills shall be conducted pursuant to the laid down schedule approval by the Fire and Rescue Force.
Air pollution by smoke and greenhouse gases	<ul style="list-style-type: none"> • The major source of power for lighting, heating, water pumping at the borehole and running the cold room shall be liquified natural gas-run generators. • The generators shall be stored in sound-proof rooms with thick walls. • The source of power to back-up the generators and water heaters shall be solar to be tapped by photovoltaic. • Power for cooking both at the guests and the staff village will be the LPG. • Burnable waste will be blazed in a furnace with smoke outlets positioned above all other structures at the lodge instead of burning in the open air.
Potential for transmission of Zoonotic diseases	<ul style="list-style-type: none"> • Animal feeding shall be prohibited. • All food remains shall be collected and kept in appropriate containers to avoid scavenging. • Domestic animals shall not be allowed at the Lodge.
Visual impact (eyesore) caused by building materials, which do not blend with the environment	<ul style="list-style-type: none"> • The roof tops of all structures shall not protrude above the eye-line to make them less visible from below; • Locally-obtained building materials that blend with the natural environment like thatch grass shall be used to cover roofs built with reflective materials like corrugated iron sheets. • Shiny or bright materials will not be used on external surface of the buildings. • Indigenous trees and grasses shall be replanted to obscure the Lodge structures. • All outdoor lights shall be fade and down-casted to reduce luminosity.
Cumulative effect of the solid and liquid from additional structures at the existing Lodge	<ul style="list-style-type: none"> • The initial strategy shall be to minimize solid waste generation through conservative procurement system such as purchasing of bulk supplies with limited packaging, use of biodegradable soaps and use of filtered drinking water to minimize generation of plastic bottles. • The Company shall join hands with other Proponents in the NCA and surrounding areas under the coordination of the Karatu District Council to improve a dumping site located at Bashay in the outskirts of Karatu Township to increase the frequency solid waste removal from the Conservation Area. • Different containers of prescribed specifications shall be placed at appropriate waste generation points within the Lodge to allow sorted waste to be disposed and treated according to different kinds; • Water minimization shall be through the installation of water-saving appliances at the Lodge;

	<ul style="list-style-type: none">• All wastewater from toilets, showers and kitchen shall pass through the PVC into the bio-digester for anaerobic cleansing and then recycled for use in non-human consumption activities• Rain water harvesting shall be initiated at the Lodge.
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CHAPTER EIGHT

8.0. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1. Overview

Impact management planning involves the carrying out of activities right from the project design, mobilization, construction, operation to decommissioning with the aim of eliminating, offsetting or reducing adverse environmental impacts to acceptable levels and enhancing the positive ones to higher standards. The ESMP for renovation, upgrading and construction of new proposed structures at the Ngorongoro Sopa Lodge is provided in Table 8.1. The ESMP consists of significant impacts that have been identified in this EIA study, their recommended mitigation measures and enhancement actions, the lead executor who is the Proponent except for organizing security for the properties that will remain at the site for NCAA use after decommissioning and the budget for impact management.

A larger part of the budget is incorporated in the project design. Where the budget for some mitigation measures and enhancement measures is included in routine operations, a token budget is provided for a measure and/or action that can be carried out concurrently with more or similar targets. In order to facilitate smooth implementation of the project, relevant stakeholders have to collaborate with the Proponent to execute the mitigation measures and enhancement actions recommended in the EIS and these are, but not limited to the regulators; relevant ministries; government institutions; local government; local community; Non-Governmental Organization (NGOs) and Community-Based Organizations (CBOs) .

8.1. Implementation of the ESMP

Apart from financing the implementation of the ESMP, the Proponent shall conduct the following tasks:

- (i) Keeping record on compliance with environmental protection specifications and liaising with relevant stakeholders whenever required;
- (ii) Liaising with environmental experts for particular specialist advice whenever necessary;
- (iii) Liaising with relevant ministries, government institutions, local government, local community, and other interested stakeholders including the NGOs and the CBOs whenever necessary; and,
- (iv) Assigning specific environmental responsibilities to the Lodge Manager, the Assistants and the Supervisors.

8.2. The ESMP Implementation Cost

The cost for implementing this ESMP during all phases of the project execution including decommissioning without considering inflation is estimated to be TZS 180,000,000 as shown in Table 8.1. Out of the total estimated cost for impact mitigation management TZS 95,000,000 is budgeted for construction phases and TZS 11,000,000 is for decommissioning phase. The impact management cost for the operation phase, which accounts for 41% of the total, is for year one of the project implementation only. While the estimated amount of impact mitigation/enhancement for operation is anticipated to decline during the succeeding years, mitigation expenditure for construction and decommissioning are short-term and will cease once those phases are completed.

Table 8.1: Environmental and social mitigation plan

Identified Impact	Mitigation/Enhancement Measures	Responsible Institution	Cost (TZS)
Positive Impacts			
Prospects for employment and the subsequent reduction of poverty among neighbouring community	<ul style="list-style-type: none"> • Employment opportunities for unskilled as well as skilled personnel whenever available shall be given to people from neighbouring communities. • Employment shall consider gender and where appropriate females with same qualifications as males will be given priority. • Employees shall be paid reasonable wages and the Proponent shall abide to all terms of employment as provided in the operating policies. 	Consolidated Tourist and Hotels Investment Limited	2,000,000
Income generation opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu districts as well as the Arusha City	<ul style="list-style-type: none"> • People from the local community shall be encouraged to produce quality farm products for supplying the renovation, re-construction and construction teams. • Available local building materials such as sand and stones shall be purchased from villages in the neighbouring Karatu District and majority of the industrial materials shall be procured from Arusha city. 	Consolidated Tourist and Hotels Investment Limited	2,000,000
Improved security in neighbouring areas due to presence of renovation, re-construction and construction activities	The NCAA shall be advised to introduce an incentive package for any person residing in the NCA who will help to arrest poacher(s) and criminal(s) prior to such incidents taking place.	Consolidated Tourist and Hotels Investment Limited	5,000,000
Negative Impacts			
Increased run-off and the resulting soil erosion and sedimentation caused by vegetation clearance	<ul style="list-style-type: none"> • Reconstruction and construction activities shall take place end of rainy season or during dry season. • Truck movement shall be confined to designated tracks. • Adequate open channels shall be provided to collect storm water. • Vegetation clearance shall be limited to unavoidable situations. 	Consolidated Tourist and Hotels Investment Limited	5,000,000

<p>Injuries, which may sometimes be fatal to people and wildlife by construction equipment and speeding vehicles</p>	<ul style="list-style-type: none"> • Construction workers shall be given PPE including heavy boots, pair of overalls, helmets, hand gloves, eye shields, earmuffs and mouth masks to reduce chances of accidents and injuries. • The use of the PPE shall be enforced. • A first aid kit shall be provided at the construction site. • First aid providers from within the construction team shall be trained. • Road bumps shall be placed at regular distances along the road that accesses the site to control speed. • Speeding drivers shall be warned and penalized. • Clear procedures on how to coordinate emergency evacuations will be posted at the construction site. • Supervisors shall be trained on how to coordinate emergency evacuations. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>10,000,000</p>
<p>Potential for increased poaching and criminal incidences due to swollen human influx</p>	<ul style="list-style-type: none"> • The NCAA and the village leaders from where potential workers will come from shall be involved in scrutinizing and screening candidates applying for employment. • A copy of a list of names with their photographs of the people involved in renovation and construction activities shall be submitted to the NCAA and respective villages where they come from. • A photograph of any employee resigning or expelled from employment shall be surrendered to the NCAA Protection Department. • All employees involved in renovation and construction works shall be given temporary identity cards and required to carry them all the time in particular when out of the construction site. • Close cooperation with other Proponents in the NCA, the Police force and rangers from the NCAA to fight insecurity incidents in the area is, and shall continue to be a priority. • Armed security guards from a registered security and reputable company are, and shall continue to be recruited to collaborate with local guards to prevent poaching and banditry. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>10,000,000</p>

	<ul style="list-style-type: none"> • Roll-calls for the renovation and construction personnel shall be taken every morning before the work starts and tonight before they go to bed to ensure that all the people are at the construction camp all the time. • The NCAA shall be requested to station a ranger at the construction camp most of the time. • Workers shall be prohibited from feeding and disturbing wild animals. • Walking beyond the construction camp premises at any time shall be prohibited. 	Consolidated Tourist and Hotels Investment Limited	6,000,000
Potential for human attack by wild animals	<ul style="list-style-type: none"> • Renovation and construction activities shall take place during day time only and leave wildlife free during the night when many species are active. • Modern machines and vehicles that generate low noise shall be used. • The renovation and construction teams shall be required to keep noise as low as possible when on site. 	Consolidated Tourist and Hotels Investment Limited	500,000
Effect of noise to humans and wild animals by construction vehicles and other equipment	<ul style="list-style-type: none"> • Renovation and construction activities shall take place during day time only and leave wildlife free during the night when many species are active. • Modern machines and vehicles that generate less vibrations shall be used. 	Consolidated Tourist and Hotels Investment Limited	500,000
Effect of vibrations to humans and wild animals by construction vehicles and other equipment	<ul style="list-style-type: none"> • A bowser shall be provided to sprinkle water on cleared sites and tracks in order to reduce dust. • Bumps shall be erected along an access road to the site to minimize dust that may be generated by speeding vehicles. • Masks shall be provided to the construction people to prevent them from dust effects. 	Consolidated Tourist and Hotels Investment Limited	2,000,000
Effect of dust to humans, wild animals and plants	<ul style="list-style-type: none"> • The renovation and construction camp shall not be fenced to allow free movement of animals. • The renovation and construction people shall be prohibited to feed and harass the animals 	Consolidated Tourist and Hotels Investment Limited	6,000,000

	<ul style="list-style-type: none"> • The renovation and construction people shall be required to keep noise as low as possible. • The NCAA shall be requested to station a ranger at the construction site to enforce the Authority's regulations. • Collection of building materials from areas invaded by alien plant species shall be avoided and close screening shall be done before importing the material to the site. • During re-planting, only indigenous plant species shall be planted. • In cooperation with the NCAA all identified alien plant species shall be removed. • Seedlings for ornamental plants raised in the Lodge nursery shall be those, which are indigenous to the NCA only. 	Consolidated Tourist and Hotels Investment Limited	6,000,000
Introduction of invasive plant species that may negatively change habitat and species diversity	<ul style="list-style-type: none"> • Professionals from OSHA shall be invited to provide safety and health awareness training to workers putting emphasis on communicable diseases in particular HIV/AIDS and other sexually transmitted diseases. • Workers shall be encouraged to voluntarily test for HIV/AIDS. • Adequate protective gear particularly condoms shall be provided at the renovation and construction camp. • Hygiene and cleanliness shall be given priority and enough sleeping tents shall be provided to avoid congestion. 	Consolidated Tourist and Hotels Investment Limited	6,000,000
Spread of communicable diseases including those, which are sexually-transmitted particularly the HIV/AIDS	<ul style="list-style-type: none"> • Long pit latrines are available at the renovation and construction site and wastewater from showers shall continue to be directed in those pits through a pathway screened with cement. • Disinfectants that kill disease vectors such as flies, inhibit offensive odour and repel houseflies is, and will continue to be sprayed regularly in the pit latrines to kill germs and bacteria. • Pit latrines shall be covered at the end of the construction phase. 	Consolidated Tourist and Hotels Investment Limited	4,000,000
Contamination of soil as well as surface and underground water by human waste and sewage	<ul style="list-style-type: none"> • Regular inspection of construction vehicles and other equipment shall be done to control accidental oil and fuel spillage and leakages. • A drum shall be provided at the construction site to store used oil. 	Consolidated Tourist and Hotels Investment Limited	4,000,000
Contamination of soil as well as surface and underground water by oil and fuel.			

	<ul style="list-style-type: none"> • The accumulated oil shall be collected, transported and delivered to bitumen manufacturers in the city of Arusha. 		
<p>Generation of solid waste and the subsequent creation of awful smell, eyesore and breeding sites for disease vectors</p>	<ul style="list-style-type: none"> • Containers for collecting different types of solid waste shall be provided at the construction site and sorting done immediately after the rubbish is generated. • Burnable waste shall be burnt immediately in the furnace to be constructed at the camp. • Decomposable waste such as food leftovers shall be buried in deep holes covered with wire mesh to prevent scavenges and left to decompose. • Non-decomposable waste which area currently not recycled anywhere in Arusha Region shall be transported and disposed-off at the Muriet dumping site, which is managed by Arusha City Council. • Recyclable and hazardous waste shall be transported to Arusha city and delivered to organized groups dealing with recycling or to retailers for recycling or appropriate disposal. • Disinfectants that kill disease vectors such as flies, inhibit offensive odour and repel houseflies will be sprayed regularly at the garbage sorting area to kill germs and bacteria. 	Consolidated Tourist and Hotels Investment Limited	10,000,000
<p>Reduced soil cover and the resulting wind and gully erosion by firewood collection for cooking and heating</p>	<ul style="list-style-type: none"> • The LPG will be the major energy for cooking at the construction camp. • The existing generators provides and will continue to be the major source of power for lighting and construction works during renovation, reconstruction and construction phases. 	Consolidated Tourist and Hotels Investment Limited	500,000

<p>Potential for damage of the Lodge properties and surrounding environment by wild and in-house fires including electrical faults</p>	<ul style="list-style-type: none"> • Fire extinguishers are, and will continue to be placed strategically at fire hazard areas and all majority of workers at the construction site will be trained on how to operate them. • Buckets painted in red color and containing sand shall be placed at the parking area and walk ways. • Necessary servicing of the fire extinguishers shall strictly be observed to make sure they are ready for use all the time. • An assembling point shall be known, placed with signage and easy to access in case of emergency and particular the fire. • Designated smoking areas shall be provided and known to the all employees at the construction camp, thus smoking in areas with high fire risk shall be prohibited. • Electrical wiring system shall be inspected regularly to detect potential electrical faults. • Training to workers in firefighting, disaster preparedness, mitigation skills and fire drills shall be conducted pursuant to the laid down schedule. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>10,000,000</p>
<p>Air pollution by smoke and greenhouse gases</p>	<ul style="list-style-type: none"> • The major source of power for lighting shall be LNG -run generators. • The generators shall be stored in sound-proof rooms with thick walls. • Cooking will be done using the LPG. • Burnable waste will be blazed in a furnace with smoke outlets positions above all other structures at the lodge instead of burning in the open air. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>500,000</p>
<p>Potential for transmission of Zoonotic diseases</p>	<ul style="list-style-type: none"> • Feeding of animal shall be prohibited. • All food remains shall be collected and kept in appropriate containers to avoid scavenging. • Domestic animals shall not be allowed at the renovation and construction camp. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>1,000,000</p>

<p>Visual impacts from disorganised keeping of building materials and disposal of rubble</p>	<ul style="list-style-type: none"> • A store built with corrugated iron sheets both for the walls and the roof and painted with green colour is in place and shall be maintained throughout the renovation, reconstruction and construction stages for storing building materials . • Rubble from the demolished structures shall be crushed at the already installed crusher to produce concrete blocks and paves • Other redundant building materials shall be removed from the site immediately after generation and disposed-off as appropriately as possible outside the NCA. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>4,000,000</p>
<p>Significant impacts associated with operation phase</p>			
<p>Positive Impacts</p>			
<p>Prospects for employment and the subsequent reduction of poverty among neighbouring community</p>	<ul style="list-style-type: none"> • Individuals from within the Ngorongoro District and from the relatively closer villages in Karatu District with requisite qualifications shall be given priority for employment. • Trained Village Game Scouts shall be considered to guide and guard guests when on walking safaris in the NCA. • Employment shall consider gender and where applicants will have same qualifications females will be given priority. • Employees shall be paid reasonable wages and according to terms and conditions as provided in the Employment Policy and the Employment and Labour Relations Act. • A motivation scheme to rewarding the most compliant Lodge staff shall be established. • On job training on different skills shall be provided to employees to advance their qualifications. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>3,000,000</p>
<p>Income generation opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu</p>	<ul style="list-style-type: none"> • People from the local community shall be encouraged to produce quality farm products such as vegetables, fruits, meat, milk and eggs for the Lodge supplies and handicraft products for sale to visitors. • Training shall be provided to volunteers from the local community on guarding and providing interpretative services. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>4,000,000</p>

districts as well as the Arusha City	<ul style="list-style-type: none"> • Other essentials for the operation of the Lodge such as equipment for sanitary shall be purchased from business people at the Karatu Township, which is the headquarters of Karatu District. • The presence of staff and tourists at the Lodge shall be sustained for the purpose of minimizing the chances of poaching incidents and boosting security in surrounding areas. • There shall be a budget for motivating the Lodge employees who will help to apprehend poachers and other criminals before the incidences take place. • Collaboration with other actors particularly the NCAA shall be enhanced to ensure that international standard services including good roads, reliable security and other utilities such as water and electricity are sustainably provided. • The presence of staff and tourists at the Lodge shall be sustained to minimize chances of poaching incidents and boosting security in surrounding areas. 	Consolidated Tourist and Hotels Investment Limited	5,000,000
Improved security within the Lodge premises and neighbouring areas due to regular movements of workers and tourists			
Increased quality accommodation facilities in the NCA	<ul style="list-style-type: none"> • Visitor and revenue records shall be prepared as appropriately as required and reports submitted regularly to the NCAA, the Ngorongoro District Council and the TRA. • Taxes, fees and levies shall be paid as appropriately as required to respective authorities. • Available tourist attractions within the NCA and surrounding areas and well as services provided at the Ngorongoro Sopa Lodge shall be marketed vigorously to convince guests stay more days at the Lodge in particular and in the Conservation Area in general. • Fee for disposing waste at the Muriet dumping site shall be paid to the Arusha City Council per prevailing regulation to boost its income. • Corporate social responsibility to the neighbouring local communities shall be executed in order to motivate people to appreciate the presence of the facility in their neighbourhood. 	Consolidated Tourist and Hotels Investment Limited	2,000,000
Opportunity for increased revenue to the NCAA, Ngorongoro and Karatu District Councils and the Central Government			10,000,000
Negative Impacts			

<p>Overutilization of water and the potential to interrupt flow patterns and aquifers</p>	<ul style="list-style-type: none"> • Underground water from a deep borehole shall be the major source for operation of the Lodge. • Water saving appliances shall be installed particularly in toilets, taps and showers. • Re-using towels and bed sheets shall be encouraged to reduce water utilization in the laundry. • Rain water shall be harvested to complement water from the borehole. • The biologically cleansed water shall be recycled for use in non-human consumption activities. • Drip irrigation to the lawn and garden shall be adopted instead of the traditional sprinkler system. • Introduce of meter reading shall be enhanced to control unnoticed overutilization of water that might be caused by undetected leakage. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>2,000,000</p>
<p>Injuries, which may sometimes be fatal to people and wildlife by speeding vehicles</p>	<ul style="list-style-type: none"> • Bumps shall be placed at regular distances along the track going to the Lodge to control speed. • Speeding drivers beyond limits shall be warned and penalized as appropriately as the existing regulations. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>1,000,000</p>
<p>Potential for increased poaching and criminal incidences due to swollen human influx</p>	<ul style="list-style-type: none"> • Regular collaboration with guards and game scouts employed by other Proponents in the NCA and rangers from the NCAA shall be enhanced for conducting patrols. • Armed guards provided with radios for communication shall be recruited from a registered and reputable security company and stationed full time at the Lodge to cooperate with individuals from the local community. • All employees at the Lodge shall be issued with identity cards and a list of names and their photograph submitted to the NCAA. • Lodge employees shall be required to carry their identity cards particularly when are out of the Lodge. • Employees shall be required to report to the Lodge Management all observed and doubtful movements of people within the NCA. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>3,000,000</p>

<p>Potential for human attack by wild animals</p>	<ul style="list-style-type: none"> Workers shall be required to neither feed nor disturb wild animals. Walking beyond the Lodge premises at any time shall be prohibited. Enough but obscured lights shall be provided along a road that stretches between the main houses and the staff/ tourist driver guides' quarters. The entrance/exist gate shall be provided with hand-held radio for full time communication with head security services' unit at the Lodge. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>1,000,000</p>
<p>Effect of noise and to humans and wildlife by tourist vehicles and generators</p>	<ul style="list-style-type: none"> The existing diesel-run generators shall be replaced with modern liquified natural gas-run generators that generate low noise. The generators shall be kept in thick-walled sound-proof rooms. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>1,000,000</p>
<p>Effect of dust to humans, wild animals and plants</p>	<ul style="list-style-type: none"> Speed bumps shall be placed along the road accessing the Lodge to minimize dust generation. Heavy penalties shall be imposed to the Company drivers found driving beyond the NCA speed limit. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>1,000,000</p>
<p>Interference with wildlife dispersal areas and calving grounds</p>	<ul style="list-style-type: none"> The Lodge shall not be fenced to allow free movement of animals. Majority of structures located on inclined slope shall be raised above the ground on concrete plinths to allow free movement of small creatures. Outdoor lights shall be fade and down-casted to reduce direct illumination. Visitors and Lodge employees shall be prohibited from feeding and harassing animals. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>1,000,000</p>
<p>Introduction of invasive plant species that may negatively change habitat and species diversity</p>	<ul style="list-style-type: none"> Close screening of foodstuffs prior to bringing them into the NCA shall be instituted. No introduction of ornamental plants shall be allowed at the Lodge. All exotic seedling in the Lodge tree nursery shall be eradicated. In cooperation with the NCA, all identified alien plants seen in the vicinity of the Lodge shall be removed. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>3,000,000</p>

<p>Spread of communicable diseases including those, which are sexually-transmitted particularly the HIV/AIDS</p>	<ul style="list-style-type: none"> • Professionals from the OSHA shall be invited to provide safety and health awareness training to workers putting emphasis on communicable diseases in particular HIV/AIDS and other sexually transmitted diseases. • Workers shall be encouraged to voluntarily test for HIV/AIDS. • Adequate protective gear particularly condoms shall be provided at the Lodge. • Sleeping rooms for the Lodge staff and tourist driver guides shall be spacious and designed to accommodate maximum of four people to avoid congestion. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>3,000,000</p>
<p>Contamination of soil as well as surface and underground water by sewage</p>	<ul style="list-style-type: none"> • The use of low phosphate soaps and application of appropriate concentrations of caustic soda shall be adopted to prevent failure in the infiltration system due to soap scum build up and therefore prevent over flow and surface pollution. • Wastewater from kitchens shall initially pass through a separator to isolate floating fat before allowing it to enter the main route for biological cleansing. • The cleansed water shall be recycled for use in non-human consumption activities. • The Lodge architectural design provides proper channels for storm water to flow towards areas covered with natural vegetation to avoid mix up with wastewater in case of leakage. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>5,000,000</p>
<p>Contamination of soil as well as surface and underground water by oil, fuel and chemicals.</p>	<ul style="list-style-type: none"> • Tour operators shall be advised to conduct regular inspection of vehicles to control accidental oil and fuel leakages. • A drum shall be provided at the workshop to store used oil. • The accumulated oil shall be collected, transported and delivered to bitumen manufacturers in the city of Arusha by licensed Company. • Laid down procedures for handling chemicals particularly in the laundry room shall be displayed at a conspicuous location and the staff required to observe them. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>1,000,000</p>

<p>Generation of solid waste and the subsequent creation of awful smell, eyesore and breeding sites for disease vectors</p>	<ul style="list-style-type: none"> • Sorting the waste into different types and stored in different containers at the site shall be conducted. • Wet waste shall be buried in deep holes covered with steel sheet to prevent scavengers with a door on top for dropping the garbage and left to decompose. • Non-decomposable wastes, which are not currently recyclable elsewhere in the region shall be transported and dumped at the Muriet dumping site located and owned by the Arusha City Council. • Recyclable waste like plastic and glass bottles as well as hazardous waste shall be delivered to retailers in the city of Arusha for recycling or appropriate disposal. • Filtered water shall be provided in re-usable glass bottles and refilled every morning to reduce the generation of plastic bottles. • Staff and tourist driver guides' canteen shall be provided with filtered water to discourage use of plastic bottles. • Disinfectants that kill disease vectors, inhibits offensive odour and repels pests will be sprayed regularly at the garbage sorting area to kill germs and bacteria and inhibit bad smell. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>6,000,000</p>
<p>Potential for damage of the Lodge properties and surrounding environment by wild and in-house fires including electrical faults</p>	<ul style="list-style-type: none"> • Fire extinguishers shall be placed strategically at fire hazard areas and all staff members will be trained on how to operate them. • Buckets painted in red color and containing sand shall be placed at but not limited to the parking area, walk ways, generator houses and kitchens. • Necessary servicing of the fire extinguishers shall strictly be observed to make sure they are ready for use all the time. • Fire blankets shall be provided in kitchens and in all guest rooms. • Guests shall be provided with a clear notice and signs of accessing the emergency assembly area in case of a fire. • Designated smoking areas shall be provided and known to the Lodge occupiers thus, smoking in areas with high fire risk including inside guest rooms shall be prohibited. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>10,000,000</p>

	<ul style="list-style-type: none"> • Electrical wiring system shall be inspected regularly to detect potential electrical faults. • Training to workers in firefighting, disaster preparedness, mitigation skills and fire drills shall be conducted pursuant to the laid down schedule approval by the Fire and Rescue Force. 		
Air pollution by smoke and greenhouse gases	<ul style="list-style-type: none"> • The major source of power for lighting, heating, water pumping at the borehole and running the cold room shall be liquified natural gas-run generators. • The generators shall be stored in sound-proof rooms with thick walls. • The source of power to back-up the generators and water heaters shall be solar to be tapped by photovoltaic. • Power for cooking both at the guests and the staff village will be the LPG. • Burnable waste will be blazed in a furnace with smoke outlets positioned above all other structures at the lodge instead of burning in the open air. 	Consolidated Tourist and Hotels Investment Limited	500,000
Potential for transmission of Zoonotic diseases	<ul style="list-style-type: none"> • Animal feeding shall be prohibited. • All food remains shall be collected and kept in appropriate containers to avoid scavenging. • Domestic animals shall not be allowed at the Lodge. 	Consolidated Tourist and Hotels Investment Limited	500,000
Visual impact (eyesore) caused by building materials, which do not blend with the environment	<ul style="list-style-type: none"> • The roof tops of all structures shall not protrude above the eye-line to make them less visible from below; • Locally-obtained building materials that blend with the natural environment like thatch grass shall be used to cover roofs built with reflective materials like corrugated iron sheets. • Shiny or bright materials will not be used on external surface of the buildings. • Indigenous trees and grasses shall be replanted to obscure the Lodge structures. • All outdoor lights shall be fade and down-casted to reduce luminosity. 	Consolidated Tourist and Hotels Investment Limited	1,000,000

<p>Cumulative effect of the solid and liquid from additional structures at the existing Lodge</p>	<ul style="list-style-type: none"> • The initial strategy shall be to minimize solid waste generation through conservative procurement system such as purchasing of bulk supplies with limited packaging, use of biodegradable soaps and use of filtered drinking water to minimize generation of plastic bottles. • The Company shall join hands with other Proponents in the NCA and surrounding areas under the coordination of the Karatu District Council to improve a dumping site located at Bashay in the outskirts of Karatu Township to increase the frequency solid waste removal from the Conservation Area. • Different containers of prescribed specifications shall be placed at appropriate waste generation points within the Lodge to allow sorted waste to be disposed and treated according to different kinds; • Water minimization shall be through the installation of water-saving appliances at the Lodge; • All wastewater from toilets, showers and kitchen shall pass through the PVC into the bio-digester for anaerobic cleansing and then recycled for use in non-human consumption activities • Rain water harvesting shall be initiated at the Lodge. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>10,000,000</p>
<p>Significant impacts associated with decommissioning</p>			
<p>Positive Impacts</p>			
<p>Site restoration</p>	<ul style="list-style-type: none"> • Rubble and other building materials from the demolished structures shall crushed in a crusher installed at the site for producing concrete blocks and paves. • Proper landscaping shall be conducted. • Indigenous trees and grasses to the area shall be planted. • A borehole and all water supply infrastructures shall be retained for NCAA use only. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>3,000,000</p>
<p>Minimized water utilization in the NCA and surrounding areas</p>	<ul style="list-style-type: none"> • A borehole and all water supply infrastructures shall be retained for NCAA use only. 	<p>Consolidated Tourist and Hotels Investment Limited</p>	<p>500,000</p>

Reduced risk of introducing invasive alien plant species	<ul style="list-style-type: none"> Only indigenous plant species to the area from tree nurseries owned by the NCAA shall be planted when restoring the site. All alien species found at the site shall be uprooted after demolishing the structures and during landscaping . 	Consolidated Tourist and Hotels Investment Limited	1,000,000
Minimized waste generation	<ul style="list-style-type: none"> All Lodge employees shall vacate the site and leave it for use by the NCAA use. 	Consolidated Tourist and Hotels Investment Limited	500,000
Reduced number of tourist beds and the subsequent decrease in solid waste and wastewater generation in the NCA	<ul style="list-style-type: none"> Waste generation both solid and liquid shall be reduced and methods of collection and disposal strengthened. 	Consolidated Tourist and Hotels Investment Limited	1,000,000
Negative Impacts			
Laying off employees	<ul style="list-style-type: none"> Employees shall be paid terminal benefits as appropriately as per prevailing government policies and regulations. Employees shall be encouraged to spend wisely their benefits and join saving and loan schemes in their new occupations. 	Consolidated Tourist and Hotels Investment Limited	1,000,000
Loss of supplementary economic opportunities by local communities and other stakeholders.	<ul style="list-style-type: none"> Local communities and respective businesspeople shall be informed at least six months before decommissioning to give them enough time to secure other income generating alternatives. 	Consolidated Tourist and Hotels Investment Limited	500,000
Reduced security in the NCA due to loss of some movements	<ul style="list-style-type: none"> More patrols in the NCA and surrounding areas shall be organized and strengthened by the NCAA. 	NCAA	2,000,000
Reduced visitor-beds in the NCA	<ul style="list-style-type: none"> The NCAA shall be informed at least six months before decommissioning to allow it look into other accommodation alternatives for potential visitors to the Area. 	Consolidated Tourist and Hotels Investment Limited	1,000,000
Loss of revenue to the Central Government, the NCAA, the Ngorongoro	<ul style="list-style-type: none"> Stakeholders shall be informed well in advance on the intent of decommissioning to allow them explore alternative sources of income to support development projects and social services that 	Consolidated Tourist and Hotels Investment Limited	500,000

District Council, the business people and the local community	would have otherwise been supported by the revenue from the facility.	
TOTAL COST		180,000,000

CHAPTER NINE

9.0. ENVIRONMENTAL AND SOCIAL MONITORING PLAN

9.1. Overview

The Environmental Management (Environmental Impact Assessment) (Amendment) Regulations, 2018 read together the “Principal Regulations”; EIA and Audit Regulations, 2005 require the Proponent to prepare a plan and undertake monitoring as well as regular auditing. Monitoring is needed to check if, and to what extent the predicted impacts are being mitigated, benefits enhanced and new problems addressed. It ensures early detection of conditions that may require new or modified mitigation measures other than those initially suggested. It also allows the commissioning of mini-impact assessments and serves as an evaluation tool to providing information on the progress and results of the mitigation plan. Monitoring plan for this project focuses mainly on impacts that are perceived to be significant as shown in Tables 6.1., 7.1, 8.1 and 9.1.

9.2. Environmental Monitoring

Environmental monitoring is systematic collection of data and information pertaining to the project characteristics, quantities and functioning of environmental variables over space and time. It is an integral part of the environmental project management process. It checks the implementation, success, failure and/or deviation of the proposed mitigation measures during all phases of the project execution. Monitoring also reveals changes and trends brought about by the project implementation. Main aspects entailing monitoring are:

- (i) Environmental status of the project;
- (ii) Identification of unexpected environmental and socio-economic impacts;
- (iii) Checking the effectiveness of mitigation measures; and,
- (iv) Providing mechanism and opportunity for making corrections and decisions.

Monitoring plan for this project will focus mainly to significant impacts which include but not limited to:

- (i) Employment and availability of opportunities for income generation to the local people and the subsequent poverty alleviation;
- (ii) Trend in visitor numbers to be accommodated at the Lodge;
- (iii) Trend in revenue generation by the NCAA, the Ngorongoro District Council and the Central Government from the Lodge;
- (iv) Trend in liquid and solid waste generation and its subsequent management;
- (v) Trend in water utilization;
- (vi) Quality of ambient air;
- (vii) Poaching and other criminal incidences within, and in the vicinity of the Lodge facility;
- (viii) Level of environmental protection including both fauna and flora of the area;
- (ix) The status and management of invasive plant species;
- (x) Quality of human health and safety particularly the Lodge employees; and,
- (xi) Type and extent of impacts initially not identified during the EIA study and mitigation measures taken.

9.3. Environmental Audit

The Environmental Management (Environmental Impact Assessment) (Amendment) Regulations, 2018 read together with the “Principal Regulations”; the EIA and Audit Regulations, 2005 direct the carrying out of regular environmental audits following the completion of the EIA study in order to determine the long-term outcomes of adopted mitigation measures and therefore become part of the environmental remedial program. The source of information that supply the process of environmental audit is from monitoring and this unveils the actual performance of mitigation measures and allows effective corrections for future projects of the same kind based on policies and legislation in force. In Tanzania environmental audit is the responsibility of the Proponent, which is the Consolidated Tourist and Hotels Investment Limited in this case. The NEMC is mandated to enforce its compliance.

9.4. Estimated cost for the EMP Implementation

Table 9.1 shows the EMP, which includes identified impacts, proposed mitigation measures, parameters to be monitored and their allowable limits, frequency, monitoring indicators and estimated cost, which amounts to TZS 75,500,000. Out of the total estimated cost for monitoring, TZS 26,500,000 will be spent during pre-construction and construction stages and TZS 8,500,000 for decommissioning. The Consolidated Tourist and Hotels Investment Limited will lead monitoring process except for some activities, which will be done after decommissioning like poaching incidences that will be the responsibility of the NCAA. Whereas the estimated monitoring cost for pre-construction/construction and decommissioning will be spent once and cease after a respective phase has been completed, those for operation are for one year only thus, the Proponent shall work out actual cost every year and include it in the overall monitoring process of the project. In order to conform to the requirements of the EMA, Cap. 191, the NCAA shall be responsible for follow up of the implementation of the EMP and the task of will be enforcement of compliance of all the commitments addressed in this EIS.

Table 9. 1: Environmental and social plan

Identified Impact	Mitigation/Enhancement Measures	Monitoring frequency	Monitoring Parameter	Target/Standard	Cost (TZS) per year
Significant impacts associated with construction phase					
Positive Impacts					
Prospects for employment and the subsequent reduction of poverty among neighbouring community	<ul style="list-style-type: none"> • Employment opportunities for unskilled as well as skilled personnel whenever available shall be given to people from neighbouring communities. • Employment shall consider gender and where appropriate females with same qualifications as males will be given priority. • Employees shall be paid reasonable wages and the Proponent shall abide to all terms of employment as provided in the operating polices. 	Half yearly	<ul style="list-style-type: none"> • Number of employees from the local community • Proportion of female to all employees 	<ul style="list-style-type: none"> • At least 80% of all construction workers come from the neighbouring community in Ngorongoro and Karatu districts. • At least 20% of all employees are females. 	1,000,000
Income generation opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu districts as well as the Arusha City	<ul style="list-style-type: none"> • People from the local community shall be encouraged to produce quality farm products for supplying the renovation, re-construction and construction teams. • Available local building materials such as sand and stones shall be purchased from villages in the neighbouring Karatu District and majority of the industrial materials shall be procured from Arusha city. 	Quarterly	<ul style="list-style-type: none"> • Amount and type of building materials acquired locally • Amount and type of foodstuffs supplied from the local community 	<ul style="list-style-type: none"> • 100% of all building materials that are available in neighbouring Karatu and Mto-wa-Mbu township are procured from those areas • 50% of all food supplies to the construction team come from Karatu District 	1,000,000
Improved security in neighbouring areas due to	The NCAA shall be advised to introduce an incentive package for any person residing in the	Quarterly	<ul style="list-style-type: none"> • Number of reported and 	<ul style="list-style-type: none"> • Zero cases of poaching incidents 	1,000,000

presence of renovation, re-construction and construction activities	NCA who will help to arrest poacher(s) and criminal(s) prior to such incidents taking place.		apprehended poachers • Number of employees motivated and total amount paid as motivation	• At least one employee motivated	
Negative Impacts					
Increased run-off and the resulting soil erosion and sedimentation caused by vegetation clearance	<ul style="list-style-type: none"> • Reconstruction and construction activities shall take place end of rainy season or during dry season. • Truck movement shall be confined to designated tracks. • Adequate open channels shall be provided to collect storm water. • Vegetation clearance shall be limited to unavoidable situations. 	Monthly	<ul style="list-style-type: none"> • Number and tree species cut • Amount of soil in m³ eroded 	<ul style="list-style-type: none"> • No single tree cut down • Zero m³ of soil eroded 	1,000,000
Injuries, which may sometimes be fatal to people and wildlife by construction equipment and speeding vehicles	<ul style="list-style-type: none"> • Construction workers shall be given PPE including heavy boots, pair of overalls, helmets, hand gloves, eye shields, earmuffs and mouth masks to reduce chances of accidents and injuries. • The use of the PPE shall be enforced. • A first aid kit shall be provided at the construction site. • First aid providers from within the construction team shall be trained. • Road bumps shall be placed at regular distances along the road that accesses the site to control speed. 	Quarterly	<ul style="list-style-type: none"> • Number of operational first aid kits available at the construction site • Number and type of PPE provided and used • Number and type of 	<ul style="list-style-type: none"> • Two first aid kits at the construction site. • Appropriate PPE provided and used by each worker. • No accident reported 	2,000,000

	<ul style="list-style-type: none"> Speeding drivers shall be warned and penalized. Clear procedures on how to coordinate emergency evacuations will be posted at the construction site. Supervisors shall be trained on how to coordinate emergency evacuations. 		accidents reported		
<p>Potential for increased poaching and criminal incidences due to swollen human influx</p>	<ul style="list-style-type: none"> The NCAA and the village leaders from where potential workers will come from shall be involved in scrutinizing and screening candidates applying for employment. A copy of a list of names with their photographs of the people involved in renovation and construction activities shall be submitted to the NCAA and respective villages where they come from. A photograph of any employee resigning or expelled from employment shall be surrendered to the NCAA Protection Department. All employees involved in renovation and construction works shall be given temporary identity cards and required to carry them all the time in particular when out of the construction site. Close cooperation with other Proponents in the NCA, the Police force and rangers from the NCAA to fight insecurity incidents in the area is, and shall continue to be a priority. Armed security guards from a registered security and reputable company are, and shall 	Quarterly	<ul style="list-style-type: none"> Number of patrol days conducted in cooperation with other stakeholders Number of criminal and poaching incidences reported within the construction and surrounding areas 	<ul style="list-style-type: none"> Two joint patrols in a year. No poaching and criminal cases reported 	3,000,000

	<p>continue to be recruited to collaborate with local guards to prevent poaching and banditry.</p> <ul style="list-style-type: none"> Roll-calls for the renovation and construction personnel shall be taken every morning before the work starts and tonight before they go to bed to ensure that all the people are at the construction camp all the time. The NCAA shall be requested to station a ranger at the construction camp most of the time. Workers shall be prohibited from feeding and disturbing wild animals. Walking beyond the construction camp premises at any time shall be prohibited. 	Monthly	<ul style="list-style-type: none"> Number of days a ranger from the NCAA is available at the Camp per month Incidents of human attack by wildlife 	<ul style="list-style-type: none"> 30 days/per month Zero incident of human attack 	500,000
Potential for human attack by wild animals	<ul style="list-style-type: none"> Renovation and construction activities shall take place during day time only and leave wildlife free during the night when many species are active. Modern machines and vehicles that generate low noise shall be used. The renovation and construction teams shall be required to keep noise as low as possible when on site. 	Daily	<ul style="list-style-type: none"> Noise level measured in decibels (dB) 	<ul style="list-style-type: none"> Not more than 60 dB during the day and 40 dB at night respectively. 	500,000
Effect of noise to humans and wild animals by construction vehicles and other equipment	<ul style="list-style-type: none"> Renovation and construction activities shall take place during day time only and leave wildlife free during the night when many species are active. Modern machines and vehicles that generate less vibrations shall be used. 	Daily	<ul style="list-style-type: none"> Measured in amplitude of vibration velocity (m/s²) for an 	<ul style="list-style-type: none"> Not more than an average of 2.5m/s² for a period of 8 hours 	500,000

Effect of dust to humans, wild animals and plants	<ul style="list-style-type: none"> • A bowser shall be provided to sprinkle water on cleared sites and tracks in order to reduce dust. • Bumps shall be erected along an access road to the site to minimize dust that may be generated by speeding vehicles. • Masks shall be provided to the construction people to prevent them from dust effects. 	Daily	<ul style="list-style-type: none"> • Particulate matter (PM) in the air. 	<ul style="list-style-type: none"> • Not more than 15mg/m³ for PM 2.5 and 50mg/m³ for PM 10 per day 	2,000,000
Interference with wildlife dispersal areas and calving grounds	<ul style="list-style-type: none"> • The renovation and construction camp shall not be fenced to allow free movement of animals. • The renovation and construction people shall be prohibited to feed and harass the animals • The renovation and construction people shall be required to keep noise as low as possible. • The NCAA shall be requested to station a ranger at the construction site to enforce the Authority's regulations. 	Daily	<ul style="list-style-type: none"> • Visual observations on incidences of change in wildlife behaviour 	<ul style="list-style-type: none"> • Zero incidences 	500,000
Introduction of invasive plant species that may negatively change habitat and species diversity	<ul style="list-style-type: none"> • Collection of building materials from areas invaded by alien plant species shall be avoided and close screening shall be done before importing the material to the site. • During re-planting, only indigenous plant species shall be planted. • In cooperation with the NCAA all identified alien plant species shall be removed. • Seedlings for ornamental plants raised in the Lodge nursery shall be those, which are indigenous to the NCA only. 	Quarterly	<ul style="list-style-type: none"> • Alien plant species and size of area invaded • Alien plant species and size of the area cleared of invasions 	<ul style="list-style-type: none"> • No invasion of alien plant species recorded • Zero alien plants removed within the Lodge boundary 	1,000,000

<p>Spread of communicable diseases including those, which are sexually-transmitted particularly the HIV/AIDS</p>	<ul style="list-style-type: none"> • Professionals from OSHA shall be invited to provide safety and health awareness training to workers putting emphasis on communicable diseases in particular HIV/AIDS and other sexually transmitted diseases. • Workers shall be encouraged to voluntarily test for HIV/AIDS. • Adequate protective gear particularly condoms shall be provided at the renovation and construction camp. • Hygiene and cleanliness shall be given priority and enough sleeping tents shall be provided to avoid congestion. 	<p>Half Yearly</p>	<ul style="list-style-type: none"> • Number of visits made by the safety and health professionals • Number of condoms provided and used at the site • Incidences of reported workers contracting HIV/AIDS and other communicable diseases 	<ul style="list-style-type: none"> • One visit by the OSHA officials in six months. • 4,000 boxes of 12 pieces per box of condoms • Zero number of workers reported to contract HIV/AIDS and other transmittable diseases 	<p>1,000,000</p>
<p>Contamination of soil as well as surface and underground water by human waste and sewage</p>	<ul style="list-style-type: none"> • Long pit latrines are available at the renovation and construction site and wastewater from showers shall continue to be directed in those pits through a pathway screed with cement. • Disinfectants that kill disease vectors such as flies, inhibit offensive odour and repel houseflies is, and will continue to be sprayed regularly in the pit latrines to kill germs and bacteria. • Pit latrines shall be covered at the end of the construction phase. • Regular inspection of construction vehicles and other equipment shall be done to control accidental oil and fuel spillage and leakages. 	<p>Monthly</p>	<ul style="list-style-type: none"> • Average volume of Biochemical Oxygen Demand (BOD) in the water. 	<ul style="list-style-type: none"> • Average of 6.0mg/L in 5 days at 30^o 	<p>3,000,000</p>
<p>Contamination of soil as well as surface and</p>	<p>Regular inspection of construction vehicles and other equipment shall be done to control accidental oil and fuel spillage and leakages.</p>	<p>Monthly</p>	<ul style="list-style-type: none"> • Average volume of 	<ul style="list-style-type: none"> • Average of 6.0mg/L in 5 days at 30^o 	<p>500,000 (done together)</p>

underground water by oil and fuel.	<ul style="list-style-type: none"> • A drum shall be provided at the construction site to store used oil. • The accumulated oil shall be collected, transported and delivered to bitumen manufacturers in the city of Arusha. 		the BOD in the water.		with pollution from sewage)
Generation of solid waste and the subsequent creation of awful smell, eyesore and breeding sites for disease vectors	<ul style="list-style-type: none"> • Containers for collecting different types of solid waste shall be provided at the construction site and sorting done immediately after the rubbish is generated. • Burnable waste shall be burnt immediately in the furnace to be constructed at the camp. • Decomposable waste such as food leftovers shall be buried in deep holes covered with wire mesh to prevent scavenges and left to decompose. • Non-decomposable waste which area currently not recycled anywhere in Arusha Region shall be transported and disposed-off at the Muriet dumping site, which is managed by Arusha City Council. • Recyclable and hazardous waste shall be transported to Arusha city and delivered to organized groups dealing with recycling or to retailers for recycling or appropriate disposal. • Disinfectants that kill disease vectors such as flies, inhibit offensive odour and repel houseflies will be sprayed regularly at the garbage sorting area to kill germs and bacteria. • The LPG will be the major energy for cooking at the construction camp. 	Monthly	<ul style="list-style-type: none"> • Volume for different types of waste generated • Total filterable residue in water. 	<ul style="list-style-type: none"> • Not more than 6,000kg (6.0 tons) of solid waste of different kinds per month • Filterable residue in water ranges between 500 and 2,000mg/L 	1,000,000
Reduced soil cover and the resulting wind and gully erosion by firewood		Monthly	Area in m ² lost	<ul style="list-style-type: none"> • 100% of the land with the Lodge compound 	1,000,000

collection for cooking and heating	<ul style="list-style-type: none"> The existing generators provides and will continue to be the major source of power for lighting and construction works during renovation, reconstruction and construction phases. 			vegetation cover	covered with vegetation	
Potential for damage of the Lodge properties and surrounding environment by wild and in-house fires including electrical faults	<ul style="list-style-type: none"> Fire extinguishers are, and will continue to be placed strategically at fire hazard areas and all majority of workers at the construction site will be trained on how to operate them. Buckets painted in red color and containing sand shall be placed at the parking area and walk ways. Necessary servicing of the fire extinguishers shall strictly be observed to make sure they are ready for use all the time. An assembling point shall be known, placed with signage and easy to access in case of emergency and particular the fire. Designated smoking areas shall be provided and known to the all employees at the construction camp, thus smoking in areas with high fire risk shall be prohibited. Electrical wiring system shall be inspected regularly to detect potential electrical faults. Training to workers in firefighting, disaster preparedness, mitigation skills and fire drills shall be conducted pursuant to the laid down schedule. 	Yearly		<ul style="list-style-type: none"> Incidences of wild and in-house fires within the Lodge premises 	<ul style="list-style-type: none"> Zero incidences 	3,000,000
Air pollution by smoke and greenhouse gases	<ul style="list-style-type: none"> The major source of power for lighting shall be LNG -run generators. The generators shall be stored in sound-proof rooms with thick walls. 	Daily		Parts per million (ppm) of air as an 8-hour time-	<ul style="list-style-type: none"> Not more than 5ppm (0.0005%) for Sulphur dioxide, 50ppm 	2,000,000

	<ul style="list-style-type: none"> • Cooking will be done using the LPG. • Burnable waste will be blazed in a furnace with smoke outlets positioned above all other structures at the lodge instead of burning in the open air. • Feeding of animal shall be prohibited. • All food remains shall be collected and kept in appropriate containers to avoid scavenging. • Domestic animals shall not be allowed at the renovation and construction camp. • A store built with corrugated iron sheets both for the walls and the roof and painted with green colour is in place and shall be maintained throughout the renovation, reconstruction and construction stages for storing building materials . • Rubble from the demolished structures shall be crushed at the already installed crusher to produce concrete blocks and paves • Other redundant building materials shall be removed from the site immediately after generation and disposed-off as appropriately as possible outside the NCA. 			weighted average (TWA) concentration	(0.005%) for Carbon monoxide and 5,000ppm (0.5%) for Carbon dioxide.	
Potential for transmission of Zoonotic diseases	<ul style="list-style-type: none"> • Reported cases of Zoonotic disease in humans 	Daily			• Zero incidents	500,000
Visual impacts from disorganised keeping of building materials and disposal of rubble	<ul style="list-style-type: none"> • Concealed storage of building materials 	Daily			• All building materials kept inside a store	500,000
Significant impacts associated with operation phase						
Positive Impacts						
Prospects for employment and the subsequent reduction of poverty among neighbouring community	Individuals from within the Ngorongoro District and from the relatively closer villages in Karatu District with requisite qualifications shall be given priority for employment.	Yearly		Number of employees from within Ngorongoro and Karatu districts	At least 60% of all employees come from within Ngorongoro and Karatu districts	1,000,000

<p>Income opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu districts as well as the Arusha City</p>	<ul style="list-style-type: none"> • Trained Village Game Scouts shall be considered to guide and guard guests when on walking safaris in the NCA. • Employment shall consider gender and where applicants will have same qualifications females will be given priority. • Employees shall be paid reasonable wages and according to terms and conditions as provided in the Employment Policy and the Employment and Labour Relations Act. • A motivation scheme to rewarding the most compliant Lodge staff shall be established. • On job training on different skills shall be provided to employees to advance their qualifications. 	<p>Yearly</p>	<ul style="list-style-type: none"> • Percent of female to all employees • Number and type of training provided to employees 	<ul style="list-style-type: none"> • At least 20% of all workers are females. • One training on safety and health by the OSHA and one on the NCAA environmental conservation regulations provided per year 	
<p>Income opportunities and the resulting improved livelihoods to the business people in the Ngorongoro and neighbouring Karatu districts as well as the Arusha City</p>	<ul style="list-style-type: none"> • People from the local community shall be encouraged to produce quality farm products such as vegetables, fruits, meat, milk and eggs for the Lodge supplies and handicraft products for sale to visitors. • Training shall be provided to volunteers from the local community on guarding and providing interpretative services. • Other essentials for the operation of the Lodge such as equipment for sanitary shall be purchased from business people at the Karatu Township, which is the headquarters of Karatu District. 	<p>Yearly</p>	<ul style="list-style-type: none"> • Amount and type of farm products supplied from the local community • Number of trained people from the local community on guiding and provision of interpretative services 	<ul style="list-style-type: none"> • At least 10% of farm products supplied to the Lodge from the local community. • At least 5 people from the local community trained in interpretative services. 	<p>1,000,000</p>

<p>Improved security within the Lodge premises and neighbouring areas due to regular movements of workers and tourists</p>	<ul style="list-style-type: none"> The presence of staff and tourists at the Lodge shall be sustained for the purpose of minimizing the chances of poaching incidents and boosting security in surrounding areas. There shall be a budget for motivating the Lodge employees who will help to apprehend poachers and other criminals before the incidences take place. 	<p>Half yearly</p>	<ul style="list-style-type: none"> Number of reported and apprehended poachers Number of employees motivated and total amount paid as motivation 	<ul style="list-style-type: none"> Zero cases of poaching incidents At least one employee motivated an 50% of the budget paid as motivation 	<p>1,000,000</p>
<p>Increased quality accommodation facilities in the NCA</p>	<ul style="list-style-type: none"> Collaboration with other actors particularly the NCAA shall be enhanced to ensure that international standard services including good roads, reliable security and other utilities such as water and electricity are sustainably provided. The presence of staff and tourists at the Lodge shall be sustained to minimize chances of poaching incidents and boosting security in surrounding areas. 	<p>Yearly</p>	<ul style="list-style-type: none"> Number of visitors/bed occupancy at the Lodge 	<ul style="list-style-type: none"> An average of 80% occupancy per bed per year 	<p>1,000,000</p>

<p>Opportunity for increased revenue to the NCAA, Ngorongoro and Karatu District Councils and the Central Government</p>	<ul style="list-style-type: none"> • Visitor and revenue records shall be prepared as appropriately as required and reports submitted regularly to the NCAA, the Ngorongoro District Council and the TRA. • Taxes, fees and levies shall be paid as appropriately as required to respective authorities. • Available tourist attractions within the NCA and surrounding areas and well as services provided at the Ngorongoro Sopa Lodge shall be marketed vigorously to convince guests stay more days at the Lodge in particular and in the Conservation Area in general. • Fee for disposing waste at the Muriet dumping site shall be paid to the Arusha City Council per prevailing regulation to boost its income. • Corporate social responsibility to the neighbouring local communities shall be executed in order to motivate people to appreciate the presence of the facility in their neighbourhood. 	<p>Yearly</p>	<ul style="list-style-type: none"> • Amount of money paid as fee, tax and levy to NCAA, the Treasury and the District Council respectively • Number of visitors' stay-days at the Lodge • Proportion of income spent on local development and social projects to the total revenue from the Lodge 	<ul style="list-style-type: none"> • 100% prescribed fees, taxes and levies paid to respective Government institutions. • Average of two stay-days at the Lodge • Between 2% and 5% of the profit spent on corporate social responsibility 	<p>2,000,000</p>
<p>Negative Impacts</p>					
<p>Overutilization of water and the potential to interrupt flow patterns and aquifers</p>	<ul style="list-style-type: none"> • Underground water from a deep borehole shall be the major source for operation of the Lodge. • Water saving appliances shall be installed particularly in toilets, taps and showers. • Re-using towels and bed sheets shall be encouraged to reduce water utilization in the laundry. 	<p>Quarterly</p>	<ul style="list-style-type: none"> • Amount of water in litres utilized per month • Percent of total wastewater recycled 	<ul style="list-style-type: none"> • Maximum of 2,000,000 litres of utilized per month • Maximum of 80% of 1,400,000 i.e. 1,120,000 litres of wastewater recycled per month 	<p>1,000,000</p>

	<ul style="list-style-type: none"> • Rain water shall be harvested to complement water from the borehole. • The biologically cleansed water shall be recycled for use in non-human consumption activities. • Drip irrigation to the lawn and garden shall be adopted instead of the traditional sprinkler system. • Introduce of meter reading shall be enhanced to control unnoticed overutilization of water that might be caused by undetected leakage. 		<ul style="list-style-type: none"> • Amount of water harvested from rain 	<ul style="list-style-type: none"> • At least one quarter of the total amount of water utilized during rainy period harvested from rain 	
<p>Injuries, which may sometimes be fatal to people and wildlife by speeding vehicles</p>	<ul style="list-style-type: none"> • Bumps shall be placed at regular distances along the track going to the Lodge to control speed. • Speeding drivers beyond limits shall be warned and penalized as appropriately as the existing regulations. 	<p>Half yearly</p>	<ul style="list-style-type: none"> • Number of vehicle accidents reported • Number of drivers and amount of money paid as penalty for driving beyond speed limits 	<ul style="list-style-type: none"> • No accident reported. • No drive reported driving beyond speed limits and penalized 	<p>2,000,000</p>
<p>Potential for increased poaching and criminal incidences due to swollen human influx</p>	<ul style="list-style-type: none"> • Regular collaboration with guards and game scouts employed by other Proponents in the NCA and rangers from the NCA shall be enhanced for conducting patrols. • Armed guards provided with radios for communication shall be recruited from a registered and reputable security company and stationed full time at the Lodge to 	<p>Yearly</p>	<ul style="list-style-type: none"> • Number of joint patrols conducted by stakeholders • Number of poaching and criminal 	<ul style="list-style-type: none"> • Two joint patrols in a year. • No poaching and criminal incidents reported 	<p>1,000,000</p>

	<p>cooperate with individuals from the local community.</p> <ul style="list-style-type: none"> All employees at the Lodge shall be issued with identity cards and a list of names and their photograph submitted to the NCA. Lodge employees shall be required to carry their identity cards particularly when are out of the Lodge. Employees shall be required to report to the Lodge Management all observed and doubtful movements of people within the NCA. Workers shall be prohibited to feed and/or disturb wild animals in anyway. Walking beyond the PTC premises without security guards at any time shall be prohibited. Structures at the staff and tourist driver guides' village shall be built in a rectangle design with one entrance to prevent easy access by wild animals. 			incidences reported	
Potential for human attack by wild animals		Daily	<ul style="list-style-type: none"> Incidents of human attack by wild animals 	<ul style="list-style-type: none"> No incident reported 	500,000
Effect of noise and to humans and wildlife by tourist vehicles and generators	<ul style="list-style-type: none"> The existing diesel-run generators shall be replaced with modern liquified natural gas-run generators that generate low noise. The generators shall be kept in thick-walled sound-proof rooms. 	Daily	<ul style="list-style-type: none"> Noise level in dB 	<ul style="list-style-type: none"> Not more than 60 and 40 dB during the day and night respectively 	500,000
Effect of dust to humans, wild animals and plants	<ul style="list-style-type: none"> Speed bumps shall be placed along the road accessing the Lodge to minimize dust generation. Heavy penalties shall be imposed to the Company drivers found driving beyond the NCA speed limit. 	Daily	<ul style="list-style-type: none"> Particulate matter (PM) in the air. 	<ul style="list-style-type: none"> Not more than 15mg/m³ for PM 2.5 and 50mg/m³ for PM 10 per day 	2,000,000

<p>Interference with wildlife dispersal areas and calving grounds</p>	<ul style="list-style-type: none"> • The Lodge shall not be fenced to allow free movement of animals. • Majority of structures located on inclined slope shall be raised above the ground on concrete plinths to allow free movement of small creatures. • Outdoor lights shall be fade and down-casted to reduce direct illumination. • Visitors and Lodge employees shall be prohibited from feeding and harassing animals. 	<p>Quarterly</p>	<ul style="list-style-type: none"> • Number of incidences observed with respect to interference with wildlife natural behaviour and harassment 	<ul style="list-style-type: none"> • Zero incidences 	<p>500,000</p>
<p>Introduction of invasive plant species that may negatively change habitat and species diversity</p>	<ul style="list-style-type: none"> • Close screening of foodstuffs prior to bringing them into the NCA shall be instituted. • No introduction of ornamental plants shall be allowed at the Lodge. • All exotic seedling in the Lodge tree nursery shall be eradicated. • In cooperation with the NCAA, all identified alien plants seen in the vicinity of the Lodge shall be removed. 	<p>Yearly</p>	<ul style="list-style-type: none"> • Alien plant species and area invaded within the Lodge boundary • Alien plant species and area cleared of invasions 	<ul style="list-style-type: none"> • No alien plant recorded at the site • The whole Lodge area (6.11 acres) is free from alien plant species 	<p>2,000,000</p>
<p>Spread of communicable diseases including those, which are sexually-transmitted particularly the HIV/AIDS</p>	<ul style="list-style-type: none"> • Professionals from the OSHA shall be invited to provide safety and health awareness training to workers putting emphasis on communicable diseases in particular HIV/AIDS and other sexually transmitted diseases. • Workers shall be encouraged to voluntarily test for HIV/AIDS. • Adequate protective gear particularly condoms shall be provided at the Lodge. • Sleeping rooms for the Lodge staff and tourist driver guides shall be spacious and designed 	<p>Yearly</p>	<ul style="list-style-type: none"> • Reported cases and type of communicable diseases contracted 	<ul style="list-style-type: none"> • Zero cases of communicable diseases reported 	<p>1,000,000</p>

Contamination of soil as well as surface and underground water by sewage	<p>to accommodate maximum of four people to avoid congestion.</p> <ul style="list-style-type: none"> The use of low phosphate soaps and application of appropriate concentrations of caustic soda shall be adopted to prevent failure in the infiltration system due to soap scum build up and therefore prevent over flow and surface pollution. Wastewater from kitchens shall initially pass through a separator to isolate floating fat before allowing it to enter the main route for biological cleansing. The cleansed water shall be recycled for use in non-human consumption activities. The Lodge architectural design provides proper channels for storm water to flow towards areas covered with natural vegetation to avoid mix up with wastewater in case of leakage. 	Half yearly	<ul style="list-style-type: none"> Nitrate levels in drinking water. Fluoride levels in drinking water. Total filterable residue in drinking water. pH level in drinking water. Amount of ammonia in water. 	<ul style="list-style-type: none"> Nitrate range between 10mg/L and 75mg/L Fluoride range between 1.5 mg/L and 4.0mg/L Total filterable residue range between 500mg/L and 2,000mg/L pH level range between 6.5 and 9.2 Ammonia not more than 2.0mg/L 	10,000,000
Contamination of soil as well as surface and underground water by oil, fuel and chemicals.	<ul style="list-style-type: none"> Tour operators shall be advised to conduct regular inspection of vehicles to control accidental oil and fuel leakages. A drum shall be provided at the workshop to store used oil. The accumulated oil shall be collected, transported and delivered to bitumen manufacturers in the city of Arusha by licensed Company. Laid down procedures for handling chemicals particularly in the laundry room shall be 	Half yearly	<ul style="list-style-type: none"> Average volume of the BOD in the water. 	<ul style="list-style-type: none"> Average of 6.0mg/L in 5 days at 30^o 	6,000,000

Generation of solid waste and the subsequent creation of awful smell, eyesore and breeding sites for disease vectors	displayed at a conspicuous location and the staff required to observe them.	Quarterly	<ul style="list-style-type: none"> • Types of waste amount in kilograms for each category generated • Total filterable residue in water. 	<ul style="list-style-type: none"> • Not more than 13,200kg of different kinds of solid waste per month • Total filterable residue to range between 500 and 2,000mg/L 	3,000,000
Potential for damage of the Lodge properties and surrounding environment	<ul style="list-style-type: none"> • Sorting the waste into different types and stored in different containers at the site shall be conducted. • Wet waste shall be buried in deep holes covered with steel sheet to prevent scavengers with a door on top for dropping the garbage and left to decompose. • Non-decomposable wastes, which are not currently recyclable elsewhere in the region shall be transported and dumped at the Muriet dumping site located and owned by the Arusha City Council. • Recyclable waste like plastic and glass bottles as well as hazardous waste shall be delivered to retailers in the city of Arusha for recycling or appropriate disposal. • Filtered water shall be provided in re-usable glass bottles and refilled every morning to reduce the generation of plastic bottles. • Staff and tourist driver guides' canteen shall be provided with filtered water to discourage use of plastic bottles. • Disinfectants that kill disease vectors, inhibits offensive odour and repels pests will be sprayed regularly at the garbage sorting area to kill germs and bacteria and inhibit bad smell. • Fire extinguishers shall be placed strategically at fire hazard areas and all staff members will be trained on how to operate them. 	Yearly	<ul style="list-style-type: none"> • Incidences of wild and in-house fires within 	<ul style="list-style-type: none"> • Zero incidences 	1,000,000

<p>by wild and in-house fires including electrical faults</p>	<ul style="list-style-type: none"> • Buckets painted in red color and containing sand shall be placed at but not limited to the parking area, walk ways, generator houses and kitchens. • Necessary servicing of the fire extinguishers shall strictly be observed to make sure they are ready for use all the time. • Fire blankets shall be provided in kitchens and in all guest rooms. • Guests shall be provided with a clear notice and signs of accessing the emergency assembly area in case of a fire. • Designated smoking areas shall be provided and known to the Lodge occupiers thus, smoking in areas with high fire risk including inside guest rooms shall be prohibited. • Electrical wiring system shall be inspected regularly to detect potential electrical faults. • Training to workers in firefighting, disaster preparedness, mitigation skills and fire drills shall be conducted pursuant to the laid down schedule approval by the Fire and Rescue Force. 		<p>the Lodge premises</p>		
<p>Air pollution by smoke and greenhouse gases</p>	<ul style="list-style-type: none"> • The major source of power for lighting, heating, water pumping at the borehole and running the cold room shall be liquified natural gas-run generators. • The generators shall be stored in sound-proof rooms with thick walls. • The source of power to back-up the generators and water heaters shall be solar to be tapped by photovoltaic. 	<p>Daily</p>	<p>Parts per million (ppm) of air as an 8-hour-TWA concentration</p>	<ul style="list-style-type: none"> • Not more than 5ppm (0.0005%) for sulphur dioxide, 50ppm (0.005%) for Carbon monoxide and 5,000ppm (0.5%) for Carbon dioxide. 	<p>2,000,000</p>

	<ul style="list-style-type: none"> • Power for cooking both at the guests and the staff village will be the LPG. • Burnable waste will be blazed in a furnace with smoke outlets positioned above all other structures at the lodge instead of burning in the open air. 					
Potential for transmission of Zoonotic diseases	<ul style="list-style-type: none"> • Animal feeding shall be prohibited. • All food remains shall be collected and kept in appropriate containers to avoid scavenging. • Domestic animals shall not be allowed at the Lodge. 	Daily	<ul style="list-style-type: none"> • Reported cases of Zoonotic disease in humans 	<ul style="list-style-type: none"> • Zero incidents 	500,000	
Visual impact (eyesore) caused by building materials, which do not blend with the environment	<ul style="list-style-type: none"> • The roof tops of all structures shall not protrude above the eye-line to make them less visible from below; • Locally-obtained building materials that blend with the natural environment like thatch grass shall be used to cover roofs built with reflective materials like corrugated iron sheets. • Shiny or bright materials will not be used on external surface of the buildings. • Indigenous trees and grasses shall be replanted to obscure the Lodge structures. • All outdoor lights shall be fade and down-casted to reduce luminosity. 	Daily	<ul style="list-style-type: none"> • Complaints on visual impact 	<ul style="list-style-type: none"> • Zero complaint 	500,000	
Cumulative effect of the solid and liquid from additional structures at the existing Lodge	<ul style="list-style-type: none"> • The initial strategy shall be to minimize solid waste generation through conservative procurement system such as purchasing of bulk supplies with limited packaging, use of biodegradable soaps and use of filtered drinking water to minimize generation of plastic bottles. 	Yearly	<ul style="list-style-type: none"> • Type and amount of waste generated and disposed off 	<ul style="list-style-type: none"> • Approximately 43,200kg of different waste generated and disposed per year • Amount of ammonia in water 	1,000,000	

	<ul style="list-style-type: none"> The Company shall join hands with other Proponents in the NCA and surrounding areas under the coordination of the Karatu District Council to improve a dumping site located at Bashay in the outskirts of Karatu Township to increase the frequency solid waste removal from the Conservation Area. Different containers of prescribed specifications shall be placed at appropriate waste generation points within the Lodge to allow sorted waste to be disposed and treated according to different kinds; Water minimization shall be through the installation of water-saving appliances at the Lodge; All wastewater from toilets, showers and kitchen shall pass through the PVC into the bio-digester for anaerobic cleansing and then recycled for use in non-human consumption activities Rain water harvesting shall be initiated at the Lodge. 		<ul style="list-style-type: none"> Amount of ammonia in water. 	not to exceed 2.0mg/L	
Significant impacts associated with decommissioning					
Positive Impacts					
Site restoration	<ul style="list-style-type: none"> Rubble and other building materials from the demolished structures shall crushed in a crusher installed at the site for producing concrete blocks and paves. Proper landscaping shall be conducted. Indigenous trees and grasses to the area shall be planted. 	The whole period of decommissioning	<ul style="list-style-type: none"> Number of indigenous trees planted Amount of rubble removed from the site 	<ul style="list-style-type: none"> 3,000 tons of rubble disposed-off or crushed for block manufacturing At most 10ha landscaped 	1,000,000

					and disposed outside the NCA or crushed for back manufacturing	<ul style="list-style-type: none"> • 1,000 trees of different species that will be recommended by NCAA planted 	
Minimized water utilization in the NCA and surrounding areas	<ul style="list-style-type: none"> • A borehole and all water supply infrastructures shall be retained for NCAA use only. 	Once and one month after decommissioning	<ul style="list-style-type: none"> • Amount of water in litres utilized by the NCAA from a retained borehole 	<ul style="list-style-type: none"> • Less than 1,000,000 litres in a month 	500,000		
Reduced risk of introducing invasive alien plant species	<ul style="list-style-type: none"> • Only indigenous plant species to the area from tree nurseries owned by the NCAA shall be planted when restoring the site. • All alien species found at the site shall be uprooted after demolishing the structures and during landscaping . 	Once during decommissioning	<ul style="list-style-type: none"> • Area or number of different alien plant species recorded • Area or number of alien plants cleared or removed respectively 	No invasive plant species observed	1,000,000		
Minimized waste generation	<ul style="list-style-type: none"> • All Lodge employees shall vacate the site and leave it for use by the NCAA use. 	Once during decommissioning	<ul style="list-style-type: none"> • Amount of solid waste generated per day 	Less than 220kg per day	500,000		

Reduced number of tourist beds and the subsequent decrease in solid waste and wastewater generation in the NCA	<ul style="list-style-type: none"> Waste generation both solid and liquid shall be reduced and methods of collection and disposal strengthened. 	Once during decommissioning	<ul style="list-style-type: none"> Amount of solid waste generated per month Amount of wastewater per year per month 	<ul style="list-style-type: none"> Less than 7,000kg of all solid per month year Less than 700,000 litres of wastewater generated per month 	500,000
Negative Impacts					
Laying off employees	<ul style="list-style-type: none"> Employees shall be paid terminal benefits as appropriately as per prevailing government policies and regulations. Employees shall be encouraged to spend wisely their benefits and join saving and loan schemes in their new occupations. 	Once during decommissioning	<ul style="list-style-type: none"> Number of employees given advice on what to do after decommissioning 	<ul style="list-style-type: none"> Maximum 180 people 	500,000
Loss of supplementary economic opportunities by local communities and other stakeholders.	<ul style="list-style-type: none"> Local communities and respective businesspeople shall be informed at least six months before decommissioning to give them enough time to secure other income generating alternatives. 	Monthly for six months before decommissioning	<ul style="list-style-type: none"> Frequency of giving notice to local communities and business people 	<ul style="list-style-type: none"> Once per month 	500,000
Reduced security in the NCA due to loss of some movements	<ul style="list-style-type: none"> More patrols in the NCA and surrounding areas shall be organized and strengthened by the NCA. 	Quarterly	<ul style="list-style-type: none"> Number and frequency of organized patrols 	<ul style="list-style-type: none"> Every three months in a year 	2,000,000

<p>Reduced visitor-beds in the NCA</p>	<ul style="list-style-type: none"> The NCAA shall be informed at least six months before decommissioning to allow it look into other accommodation alternatives for potential visitors to the Area. 	<p>Six months before decommissioning</p>	<p>conducted by NCAA</p> <ul style="list-style-type: none"> Frequency of giving notice to stakeholders who receive revenue from the Lodge 	<ul style="list-style-type: none"> Once every month 	<p>1,000,000</p>
<p>Loss of revenue to the Central Government, the NCAA, the Ngorongoro District Council, the business people and the local community</p>	<ul style="list-style-type: none"> Stakeholders shall be informed well in advance on the intent of decommissioning to allow them explore alternative sources of income to support development projects and social services that would have otherwise been supported by the revenue from the facility. 	<p>Six months before decommissioning</p>	<ul style="list-style-type: none"> Frequency of giving notice to stakeholders who receive revenue from the Lodge 	<ul style="list-style-type: none"> Once every month 	<p>1,000,000</p>
<p>TOTAL COST FOR MONITORING 75,500,000</p> <p style="text-align: right;">TZS</p>					

CHAPTER TEN

10.0. RESOURCE EVALUATION OR COST-BENEFIT ANALYSIS

10.1. Benefits Related to the Project

Several benefits are associated with the ongoing renovation, and proposed reconstruction of the demolished main house as well as construction of the proposed new presidential suites and associated facilities. These benefits will be in the areas of, but not limited to, poverty alleviation particularly the local community, the country's economic growth and tourist's enjoyment and satisfaction. The facility will create employment to surrounding communities and provide source of income to business people in Karatu District and Arusha city. Salaries for those who will be employed by the Lodge will extend beyond employees to benefit other people including family members and other dependents.

The local people will have opportunity to sell foodstuffs to the construction camp and the Lodge during operation phase as well as provide interpretative services to visitors. Most of the construction materials will be purchased from Arusha city and most of the non-industrial materials like sand and stones shall be purchased from the neighboring Karatu and Mto-wa-Mbu townships respectively thus, benefit the business people in those areas. Visitors' spending will create multiplier effects particularly to the businesspeople operating craft shops along the Arusha-Karatu highway. In view of the above, the ongoing and proposed activities align well with the government initiatives of creating employment opportunities, enhancing economic growth and contributing toward poverty alleviation among Tanzania citizens.

The modernization of the Lodge is also in line with the tourism and trade policies. In order to improve tourism industry, the tourism policy targets among other things to partner with foreign and domestic investors to enhance and expand the sector without compromising the preservation of natural, historical and cultural assets. One of the areas requiring improvement according to the National Tourism Policy is the operation of high-class accommodation facilities. The ongoing and proposed facelift activities at the Ngorongoro Sopa Lodge will widen competition and therefore oblige accommodation and service providers to improve customer care that will benefit clients to attain optimal enjoyment and satisfaction.

All Company junior employees including majority at the managerial level will be Tanzanians. The project will definitely contribute income to the NCAA, the Ngorongoro District Council, the Central Government and other government institutions like the NEMC, the OSHA, the Internal Drainage Basin Water Board and the Fire and Rescue Force through fee, tax and levy payments; part of it will be remitted back to the local communities for improving social services such as health, education, roads, water supply and security not only within the project area but also in other parts of the country.

The Trade Policy advocates for facilitation of smooth integration into the Multi-Trading System (MTS) and reduction of marginalization among Tanzanians. The policy intends to ensure that liberalization offer meaningful, identifiable and measurable benefits to Tanzania citizens. In support of the National Development Vision 2025, the main objective of the Trade Policy is to raise efficiency, widen linkages in domestic production and build a diversified competition in

export sector as a means of stimulating higher rates of growth and development. The modernization and extension of the existing Ngorongoro Sopa Lodge will therefore contribute to foreign currency earnings that will enhance the nation's economic growth.

10.2. Cost Related to the Project

The ongoing renovation and the proposed reconstruction of the demolished main house and construction of new presidential wing that will include the suites and associated facilities like the common swimming pool will however, have considerable cost particularly to surrounding communities with regard to health and safety. The cost may also emanate, if not well managed from increased production of waste leading to haphazard disposal and the resulting offensive smell, thus affecting animals and human health. Over utilization of water is another significant impact, which may impair the sustainability of the NCA in particular and Serengeti ecosystem in general if not well planned. Mitigation and monitoring cost of direct, indirect, long term and short-term impacts, which are significant, is estimated to be TZS 180,000,000 (Table 8.1) and TZS 75,500,000 (Table 9.1) respectively per year.

Out of the total estimated cost for impact management TZS 95,000,000 is budgeted for the pre and construction phase (41%) and TZS 11,000,000 for decommissioning phase (6.1%) of the total. With respect to total monitoring cost, the estimated TZS 26,500,000 and TZS 8,500,000, which accounts for 35% and 11% is budgeted for pre/construction and decommissioning phases respectively. This means that while 47% and 46% of the total budget for impact management and monitoring respectively will be spent once, the remaining 53% and 54% for mitigation and monitoring correspondingly will continue to decrease gradually over time if the implementation of the respective activities will be executed as recommended in this EIS.

CHAPTER ELEVEN

11.0. DECOMMISSIONING PLAN

Although the period of lease for the piece of land where the Ngorongoro Sopa Lodge is located is 33 years, reviewed every 2-5 years and renewable according to the NCAA-Private Concession Policy, Strategy and Procedures (2019-2024), in case the operation of the Lodge comes to an end due to any reason(s), all decommissioning requirements as provided for, in the EIA and Audit Regulations, 2005 and their amendments thereof of 2018 shall be adhered to. Mitigation and enhancement actions of the identified impacts shown in the ESMP and the monitoring schedules indicated in the EMP as well as the budget for the implementation of both plans assume that during decommissioning phase, the situation will remain as it now. In reality the plan will be adjusted to the situation that will prevail at the time of decommissioning.

The plans therefore focus on enhancement actions for positive impacts and mitigation measures for negative ones, which are indicated in Tables 8.1 and 9.1. The positive impacts that will require enhancement include but are not limited to site restoration; availability of some structures for the NCAA use; reduction of water utilization in the NCA; containment of the risk involved with the introduction of alien plant species; and reduced waste generation.

Mitigation actions for negative impacts shall concentrate on management of rubble from the demolished structures; laying-off employees; loss of supplementary economic opportunities by the local communities; and loss of revenue by the NCAA, the Ngorongoro and Karatu District Councils, the Central Government, other government institutions and the local community. Since the budget for decommissioning provided in the ESMP and EMP is indicative, the actual cost will be determined at the time of decommissioning.

CHAPTER TWELVE

12.0. SUMMARY AND CONCLUSIONS

12.1. Summary

According to the NCA-MZP (2021-2026), the Ngorongoro Sopa Lodge is located in Catchment Forests Zone. This zone and particularly the NHFR is a vital area for, biological diversity both flora and fauna, spiritual and cultural practices, nature tourism carbon sequestration to mitigate climate change effects, recharge area for springs supporting the ground water forests in Lake Manyara National Park and supplies water for agricultural activities in the communities in Karatu District. communities in and adjacent to NCA. Despite the environmental, ecological, social and economic significance of this zone, the Ngorongoro Sopa Lodge was established in 1992, when neither the first GMP to be approved and implemented nor the MZP were in place. The environmental conservation approaches, which the Consolidated Tourist and Hotels Investment Limited have been applying since the Lodge was established have kept the site relatively resilient.

Although the Lodge was subjected to an initial environmental audit, which recommended several mitigation measures and enhancement measures that have been executed occasionally, it was obligatory according to the EMA Cap. 191 and the Private Concession, Strategy and Procedures (2019-2024) to subject the project to the EIA study because the investor is intending to establish new structures on a previously undeveloped land and the facelift being undertaken is also substantial to cause new impacts, which were not determined when the initial environmental audit was carried out.

The EIA study has established many positive conditions that have been taken care of by architectural designs and the project concept. The assessment has however, identified some negative impacts, which need mitigation measures as well as positive situations needing enhancement actions. In view of that, the renovation, modernization and construction of new facilities and later on the operation of the Lodge will comparatively have more benefits than costs and most of the identified negative environmental and social impacts could be mitigated. The Proponent is well vested with most of the relevant national policies, laws and international conventions that govern environmental conservation and safety and human health.

The Proponent is aware with relevant NCAA guidelines particularly the Private Concession Strategy and Procedures (2019-2024) and signed a Lease Agreement in 2023. The Company will therefore comply with all the requirements for investing in the NCA in particular and in Tanzania in general as well as additional directives that will be provided by the NCAA management. The Proponent is further committed to implementing all the mitigation measures and enhancement actions addressed in this EIS.

To that end, environmental experts hereby recommend that the proposed modernization and expansion of the Ngorongoro Sopa Lodge be allowed to continue because it will have many merits than the anticipated demerits. Long-term benefits to be realized from the implementation of the project among other prospects, will be employment opportunities for the people from neighbouring villages in particular and other Tanzanians in general; increased visitor beds in the

high-end tourist accommodation in the NCA; attraction to more stay-days and the subsequent increase in the income to the local communities located within and outside the Ngorongoro District; the Ngorongoro District Council; the NCAA; other government institutions; and the Central Government. These benefits and others override the identified negative impacts, which can be reduced, remedied and/or eliminated. Notwithstanding this recommendation by the environmental experts, the NCAA should make follow up the implementation of the project to ensure compliance with the general and specific conditions to be accompanied with the Environmental Certificate. The NEMC should enforce the requirement of monitoring the progress of implementation as recommended in this EIS and direct the Proponent to undertake environmental audits and prepare reports according to the legal requirements.

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LIST OF APPENDICES

Appendix 1: Permit from the NCAA to increase the number of guest beds at the existing Ngorongoro Sopa Lodge



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM
NGORONGORO CONSERVATION AREA AUTHORITY



In reply please quote:

Ref. No CD.368/540/01-C/115

13th November, 2023

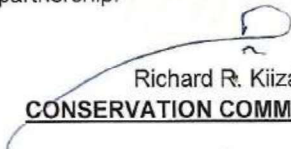
Executive Chairman & CEO,
Consolidated Tourist and Hotel Investment Limited,
P.O. Box 1823,
ARUSHA.

Email: info@sopalodges.com

RE: MEASUREMENT OF NGORONGORO SOPA LODGE (NSL) AS PER LEASE AGREEMENT CONDITION SIGNED ON 30 JUNE 2023

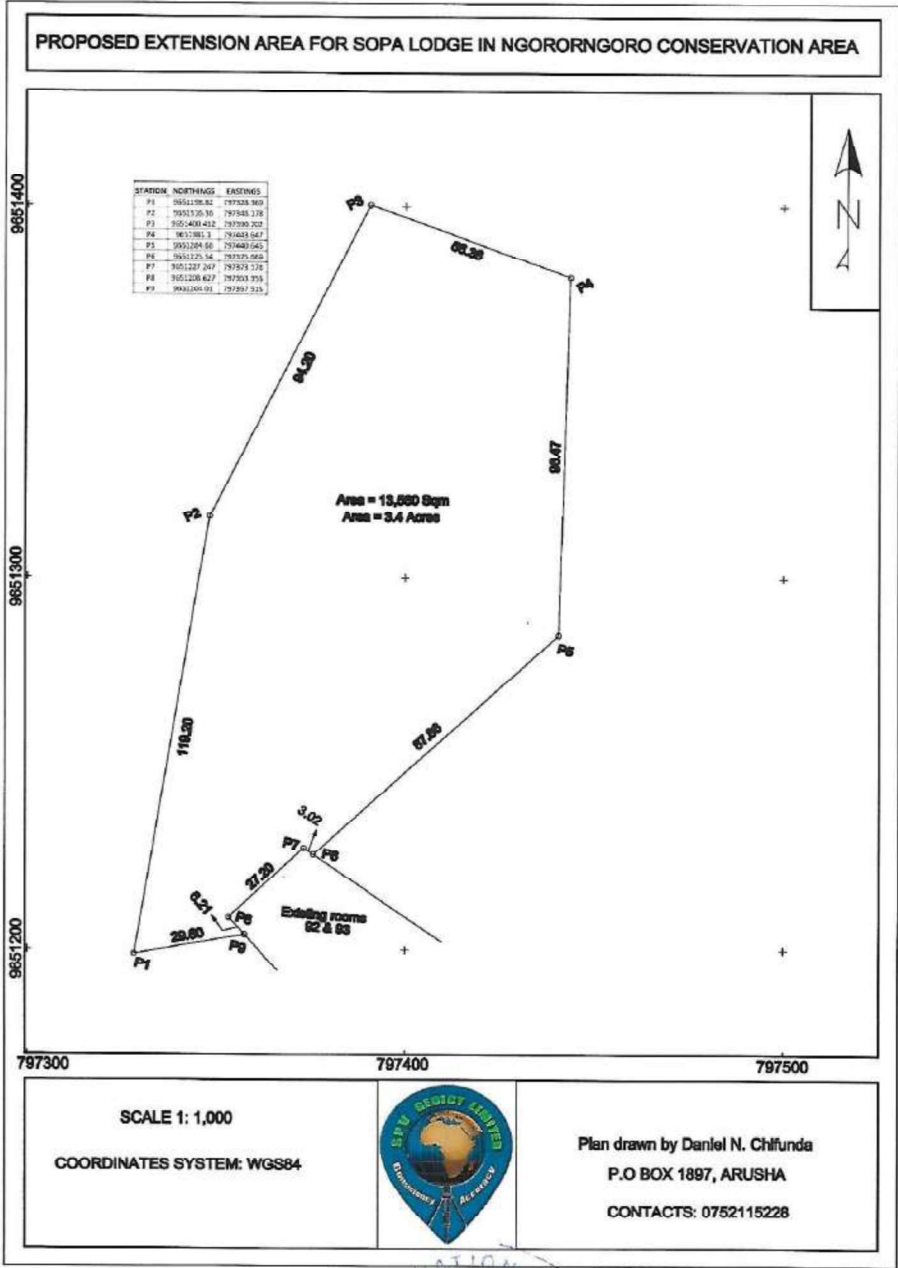
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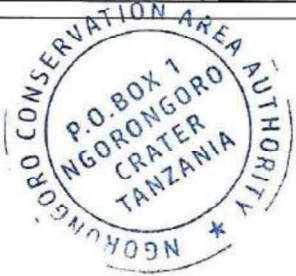
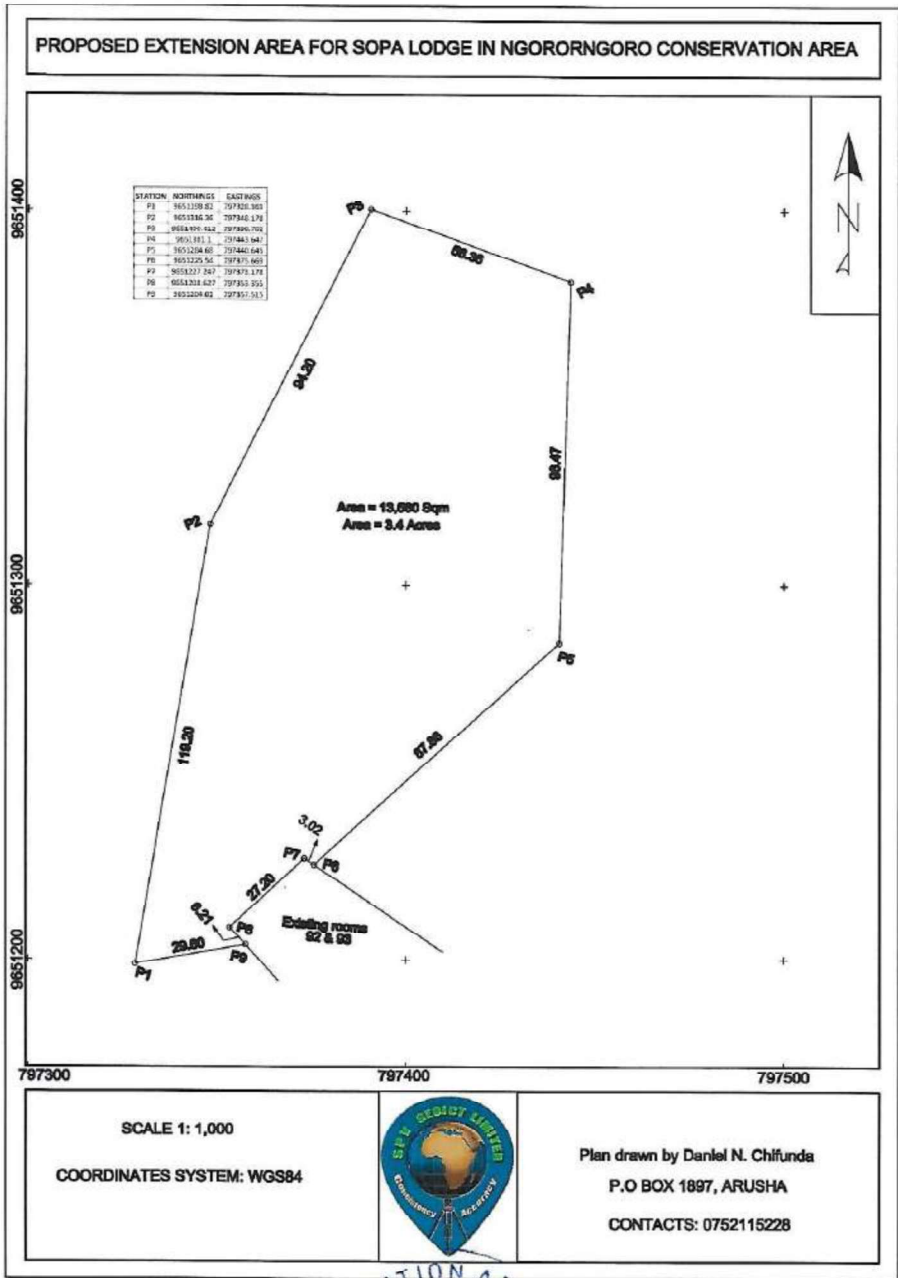
2. This letter is in response to your letter under reference number CTHI/NCAA/13.9.2023 dated 13th September, 2023 and the joint review exercise which was conducted on the ground. With this letter, please be informed that, The Authority has concluded the exercise and have produced two site maps for your hotel premises as requested.
3. The site maps include the site map and conner coordinates (10.1 Acres) for the existing property (100 guest rooms (200 guest beds including accommodation for staff, guides and drivers). The second site map and conner coordinates (3.4 Acres) for the 10 guest rooms (20 guest beds) for presidential wing extension as provided under section F of the lease agreement. The site maps are attached together with this letter and serves as annexure to the Lease Agreement.
4. Thank you for investing in Ngorongoro Conservation Area Authority and we look forward to a sustainable partnership.


Richard R. Kiiza
CONSERVATION COMMISSIONER.

Headquarters: P. O. Box 1, Ngorongoro Crater. Tel: +255-27-253 7006/19
Conservation Commissioner Office: Tel: +255-27-253 7046
E-Mail: cc@ncaa.go.tz Website: www.ncaa.go.tz
Liaison Office: P.O. Box 776 Arusha Tel: +255-27-250 3339
Information Office: Tel: +255-27-254 4625

All official correspondence should be addressed to The Conservation Commissioner





Appendix 2: Letter from the NCAA Requiring Consolidated Tourist and Hotels Investment Limited to Undertake an EIA of the Proposed Upgrading and Construction of New Presidential Suites within the Leased Land at Ngorongoro Sopa Lodge.



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM
NGORONGORO CONSERVATION AREA AUTHORITY



In reply please quote:

Ref. No. BE.76/341/11/39

25th May, 2024

Group Chairman & CEO
Consolidated Tourist and Hotels Investment Limited,
P. O. Box 1823,
ARUSHA, TANZANIA.

REF: REQUEST FOR PERMISSION TO DO THE CLEANING OF THE NEW SITE FOR THE PRESIDENTIAL SUITES.

Refer to the heading above

2. The Authority confirms the receipt of your letter with reference number CTHI/NCAA/04/03/2024 requesting the permission to do clearance of the new site as preparation for construction the presidential suites.
3. Following your request, the Authority team on 16th May, 2024 conducted the site visit to Sopa Lodge on new site proposed for construction of presidential suites. It was confirmed that the proposed site for construction is within the lease area of Sopa Lodge but there is no developed facility within the area. Due to that fact, Consolidated Tourist and Hotels Investment Limited (CTHI) is required to undertake the Environmental Impact Assessment (EIA) in accordance with Environmental Management Act No. 20 of 2004 and its regulations before starting clearing the area.
4. Upon completion of EIA of the proposed site, EIA report should be submitted to NCAA to reconsider your request for further steps of construction.
5. For more clarification, please do not hesitate to contact the Authority at any time.

Victoria R. Shayo

For: **CONSERVATION COMMISSIONER**

Headquarters: P. O. Box 1, Ngorongoro Crater. Tel: +255-27-253 7006/19
Conservation Commissioner Office: Tel: +255-27-253 7046
E-Mail: cc@ncaa.go.tz Website: www.ncaa.go.tz
Liaison Office: P.O. Box 776 Arusha Tel: +255-27-250 3339
Information Office: Tel: +255-27-254 4625

All official correspondence should be addressed to The Conservation Commissioner

Appendix 3: The Company's Certificate of Incorporation

C O P Y C.N.I

TANZANIA


TANZANIA

Stamp Duty Shs..... * Paid

Receipt No..... of..... 2

[Signature]

Asst. Registrar of Companies



I HEREBY CERTIFY THAT THIS IS A TRUE COPY OF THE ORIGINAL.

[Signature]

Date: 20-6-88

Certificate of Incorporation

No..... 14992

—

I HEREBY CERTIFY THAT

CONSOLIDATED TOURIST AND HOTELS INVESTMENT


..... Limited

is this day incorporated under the Companies Ordinance (Cap. 212) and that the Company is Limited.

Given under my hand at Dar es Salaam

this..... 23rd day of..... MARCH

One thousand nine hundred and..... EIGHTY EIGHT



Sgd. R. B. MNGULWI

.....

Registrar of Companies

G P Dam 21780/10-87/8m

Appendix 4: The Company's Tax Payer's Identification Certificate (TIN)

CTIN: 0181548



TANZANIA REVENUE AUTHORITY

**CERTIFICATE OF REGISTRATION
FOR
TAXPAYER IDENTIFICATION NUMBER (TIN)**

(ISSUED UNDER SECTION 3A(4) OF THE INCOME TAX ACT NO. 33 OF 1973)
AS AMENDED BY THE FINANCIAL LAWS (MISCELLANEOUS AMENDMENTS) 2000

THIS IS TO CERTIFY THAT
CONSOLIDATED TOURIST & HOTELS INVESTMENT LTD.
.....

has been registered with the Tanzania Revenue
Authority and assigned the Taxpayer
Identification Number

100-169-487
.....

with effect from 01/07/1999
.....



P. N. Kassera

OFFICIAL SEAL

COMMISSIONER FOR INCOME TAX

NOTE: THE REQUIREMENTS UNDER WHICH THIS CERTIFICATE IS ISSUED ARE STATED OVERLEAF

Appendix 5: TALA License



**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM**

TOURISM DIVISION

LICENSE TO CARRY ON THE BUSINESS OF

Tourism Agent

Tourism Act No.11, 2008

License No: 021193

1.(a) License is hereby granted to: **CONSOLIDATED TOURIST & HOTELS
INVESTMENT LTD.**

To carry on the business of Tourism Class A

Established under the business name of: **CONSOLIDATED TOURIST & HOTELS
INVESTMENT LTD.**

Located at: **ARUSHA**

2. Specific nature of tourism business to be operated: **Tour Operator (10-30 Vehicles)**

3.(a) Date of Issue	2025-01-01 00:00:00	(b) Date of Expiry	2025-12-31 23:59:59
4. Fee Paid (TZS)	12775000.00	Control Number	994510067228



Signed _____
Director of Tourism

Appendix 6: Names, Signatures and Institutions of People who were Consulted

CONSOLIDATED TOURIST AND HOTELS INVESTMENT LTD

SOPA LODGE

LIST OF STAKEHOLDERS CONSULTED DURING UNDERTAKING OF THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR ONGOING RENOVATION AND ESTABLISHMENT OF PRESIDENTIAL SUITES AT THE NGORONGORO SOPA LODGE WITHIN NGORONGORO CONSERVATION AREA IN NGORONGORO DISTRICT, ARUSHA REGION.

3	Benson P. Mhagama	DEMO - Ngorongoro	NDC	0767562580		15/07/2024
3	Sabina I. Lyimo	Principal Hydrologist	IDBUB-ARUSHA OFFICE	0712766066		17/09/2024
4	FREDRICK J. KAYOGOLY	METEOROLOGIST	TMA	0784418999		12/09/2024
	JERARDI NDIKURU-AR	DFD	HIRE AND REPAIRS	0754076442		19/9/2024
3	HAMS HARUNA	ES&S	OJHA	0769543546		19/9/2024

CONSOLIDATED TOURIST AND HOTELS INVESTMENT LTD

SOPA LODGE

LIST OF STAKEHOLDERS CONSULTED DURING UNDERTAKING OF THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR ONGOING RENOVATION AND ESTABLISHMENT OF PRESIDENTIAL SUITES AT THE NGORONGORO SOPA LODGE WITHIN NGORONGORO CONSERVATION AREA IN NGORONGORO DISTRICT, ARUSHA REGION.

NO	NAME	TITLE	INSTITUTION	PHONE NUMBER	SIGNATURE	DATE
1	Dr. Asintwili Louassa	PRINCIPLE Researcher	TAWIRI	0754568468		17/6/25
2						
3						

Appendix 7: NCAA Official Comments



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM
NGORONGORO CONSERVATION AREA AUTHORITY



In reply please quote:

Ref. No. CD.369/540/01F/91

28th November, 2024

Zonal Manager,
National Environment Management Council (NEMC)
Northern Zone Office,
Ngorongoro Tourism Centre 6th Floor,
P.O. Box 1041,
ARUSHA.

Email: nemcarusha@nemc.or.tz

RE: **INVITATION TO PARTICIPATE IN THE TECHNICAL ADVISORY COMMITTEE
(TAC) MEETING**

Reference is made to the aforementioned matter.

2. Ngorongoro Conservation Area Authority (NCAA) acknowledges the receipt of your letter with Ref. No. HF. 145/193/54/11 dated 18th November 2024 inviting the Authority to participate in Technical Advisory Committee (TAC) meeting for Environmental Impact Assessment (EIA) for the *Proposed Ongoing Renovation and Establishment of Presidential Suites at Ngorongoro Sopa Lodge within Ngorongoro Conservation Area (NCA) in Ngorongoro District, Arusha Region.*
3. In that regard, the Authority successfully participated in site verification visit and conducted comprehensive review of the EIA Report that have both raised important comments to be discussed and addressed accordingly:
 - i. The official offer letter with Ref. No. CD. 368/540/01-C/115 dated 13th November 2023 with its attached stamped map of 3.4 acres issued by the Authority is not the one unveiled by EIA Report, and

Headquarters: P. O. Box 1, Ngorongoro Crater: Tel: +255-27-253 7006/19
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Liaison Office: P.O. Box 776 Arusha Tel: +255-27-250 3339
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NGORONGORO CONSERVATION AREA AUTHORITY

- ii. The Proposed project (Ongoing Major Renovation and Establishment of proposed Presidential Suites at Ngorongoro Sopa Lodge) is positioned within the Crater Rim; Therefore, the proponent is argued to ensure avoidance and where necessary minimize all environmental destructions that may rise during both construction and operational phases.
 - iii. The Authority also reminds the proponent to adhere and comply with the Authority's regulations throughout the implementation of project and reminded that, there will be periodic monitoring.
4. official letter with approved stamped site map attached for more clarification. And Staff from NCAA has already been assigned to attend Technical Advisory Committee meeting on said date.
 5. Thank you for your attention and continued support in managing and preserving the conservation area effectively.



Dr. Elirehema J. Doriye
CONSERVATION COMMISSIONER

Headquarters: P. O. Box 1, Ngorongoro Crater. Tel: +255-27-253 7006/19
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Appendix 8: UNESCO Comments



UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
UNESCO NATIONAL COMMISSION



Our Ref,
UNESCO/NC/CLT/WHC/24/H/67

31st July 2024

Dr. VICTOR APOLLO RUNYORO
Registered (EIA and EA) Expert
Practicing Certificate No. NEMC//PC/EIA/2021/0089
P.O. Box 15070,
Arusha –Tanzania.
E-mail: victorrynyoro60@gmail.com

REF: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE ONGOING RENOVATION AND ESTABLISHMENT OF PRESIDENTIAL SUITES AT THE NGORONGORO SOPA LODGE WITHIN NGORONGORO CONSERVATION AREA IN NGORONGORO DISTRICT, ARUSHA REGION

Refer to the caption subject.

2. The National Commission for UNESCO is in receipt of a letter with Ref. No. VAR/EIA/NCA/O9, dated 30th July 2024, concerning Environmental Impact Assessment (EIA) for the ongoing renovation and establishment of presidential suites at the Ngorongoro Sopa Lodge within Ngorongoro Conservation area in Ngorongoro District, Arusha Region.
3. The UNESCO National Commission would like to give the following views on the proposed project:
 - I. The World Heritage Convention and its Operational Guidelines allows development of facilities to cater for tourists. However, given the status of Conservation Area (NCA) as a World Heritage Site, there are guidelines which have to be followed for the purpose of maintaining the Outstanding Universal Values (OUVs) of the area.
 - II. In order to ensure there are no potential or ascertain impacts to the OUVs, International Union for Conservation of Nature (IUCN) and International Council of Monuments and Sites (ICOMOS) which are advisory bodies for UNESCO for the Natural and Cultural Sites respectively strongly and technically advise the use of IUCN guiding Note for EIA and ICOMOS guidelines for Heritage Impact Assessment

7 Magogoni Street, P.O.Box 20384, 11479 Dar es Salaam, Tanzania.

Email: info@natcom.go.tz Website: www.natcom.go.tz Tel: +255 22 2126598; Fax: +255 22 2134292

respectively. Applications of the guidelines are meant to gauge impacts in relation to OUVs and thus easily inform on the extent of the impacts over the OUVs.

III. General Management Plan (GMP) of the Ngorongoro Conservation Area also provides for the Zones set aside for development of various facilities. It is in our understanding that there is no mischief in the information you have provided in your scoping study.

4. It is further recommended that you exhaust secondary information to understand whether the area has any archaeological or paleontological materials. In case there is no such information in the literature, it is recommended you engage an expert to apply a shovel tests approach from which findings may inform the possibility or unlikely presence of the archaeological or paleontological materials in the areas.

5. It is our understanding that you will find the provided comments helpful as together we continue to conserve Ngorongoro Conservation Area as Heritage of the World Community.

Thank you for your continued cooperation.



Fatma S. Mrope
For: EXECUTIVE SECRETARY

Appendix 9: TAWIRI Comments



NATIONAL ENVIRONMENT MANAGEMENT COUNCIL

RE: SUBMISSION OF COMMENTS FOR THE PROPOSED ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE ONGOING RENOVATION AND ESTABLISHMENT OF PRESIDENTIAL SUITES AT THE NGORONGORO SOPA LODGE, WITHIN NGORONGORO CONSERVATION AREA IN NGORONGORO DISTRICT, ARUSHA

REGION

As you might be aware, on June 11th, 2023, TAWIRI received an email from Dr. Victor A. Runyoro, an Environmental Expert commissioned by Consolidated Tourist and Hotels Investment Limited together with a letter of offer from NCAA. Among the other things the NCAA offer letter requested the developer to conduct fully EIA due to the fact that the Ngorongoro Sopa lodge is located in the crater rim. The Lodge that started operations in the NCA in 1992 including a chain of the Sopa lodges, managed by Consolidated Tourist and Hotels Investment Limited in Kenya and Tanzania.

In order to catch up with the current demand of tourist facilities, clients' tastes and preferences while smoothening the future management of the facility, the Consolidated Tourist and Hotels Investment was obliged to carry out an intensive renovation of the guest rooms and demolish and rebuild the main house; the activities, which are going on. Further, the Company requested the Ngorongoro Conservation Area Authority (NCAA) to construct 20 new presidential suites on a piece of land leased to Ngorongoro Sopa Lodge but it currently undeveloped. The estimated total investment for face-lifting the Lodge is Tanzania Shillings 47,300,000,000.

Therefore, Dr Runyoro email requested TAWIRI to provide scientific advice on the ongoing renovation and establishment of presidential suites at the Ngorongoro Sopa lodge. The EIA report has been already submitted and discussed at TAC- NEMC and is currently at but among other things, NEMC directed the consultant to receive TAWIRI written comments and opinions on the proposed project.

On June 13, 2023, Dr. Asanterabi Lowassa from TAWIRI and Gilbert (representative of Consultant and Mr Solar from Sopa lodge conducted a site visit on the proposed area at Irkeepusi Village, in the NCA, Ngorongoro District, Arusha region. The team conducted a thorough observation and discussion on the site and realized that:

- Sopa lodge was operated in the NCAA since 1992 when the area was categorized as an investment zone, and it is within Irkeepusi village, so there is no objection to the proposed project.
- Further, during this survey, the team observed that the site is located in a part of the forest reserve of the northern highlands, about 900m from Lemala Ranger Post. Close to SOPA lodge, there is a stream of running water, which is a branch of the Lemala River known as "olchoro lekule".
- The team also observed signs of wildlife species dung including giraffes (*Giraffa camelopardalis tippelskirchii*), elephants and livestock, such as cattle, goats, sheep and donkeys.
- The observed flora includes woodlands composed of *Acacia tortilis* and *Balanit*. We also found that the NCAA has not yet put up beacons to demarcate the new area requested for the construction of 20 presidential suites which is currently used by livestock.
- We thought that the proposed area or site is suitable for development and that it will help reduce environmental destruction caused by the high use of livestock, hence the restoration of the area.
- We also found that almost 75% of construction needed for guest rooms is almost done with slightly impacts likely to occur such as death of wildlife due to construction activities (see plate 1).

The lodge is also using surface water from lamella river.

Therefore, the following must be considered:

- To ensure availability of water to wildlife the surface water from river should not be used by lodge instead a hydrological survey should be conducted immediately to secure alternative water.
- Restocking of native tree species for the areas proposed for construction of the 20 presidential suits.
- The developer should consider the option of harvesting rainwater to minimize over-utilization of water and any other negative impact on natural water regimes.
- The construction of the new swimming pool should be away from the crater rim.
- Mitigation measures to avoid soil erosion due to the nature of the landscape or terrain, including avoidance of unnecessary vegetation clearance during the construction and decommissioning phases.
- Proper management of solid, liquid, and gas waste is necessary to avoid water, air, and soil pollution.

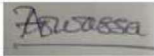
- Due to the presence of different wildlife species on the proposed site, we recommend the developer and consultant put in place proper mitigation to avoid human attacks by wildlife as well as the prevention of zoonotic disease in all phases.
- Mitigation for controlling the introduction of invasive plants during the construction and operation phases.
- Due to ongoing construction activities the area should be fenced by iron sheets to prevent wildlife to enter into the construction site (see plate 2 for administration building).

conclusion

Based on the site visit, discussion with NCAA staff, and information provided in the scoping report/EIS, it appears that the developer has complied with the necessary procedure; hence, TAWIRI has no objection to supporting the development project in the proposed area if the above comments are adhered to.

I look forward to your action.

For Director General



Asanterabi Lowassa



Appendix 10: NEMC Letter for Approval of ToR



THE UNITED REPUBLIC OF TANZANIA
VICE PRESIDENT'S OFFICE
NATIONAL ENVIRONMENT
MANAGEMENT COUNCIL (NEMC)



In reply please quote:

Ref: HF.145/193/54/02.

Date: 30/07/2024

Consolidated Tourist and Hotels Investment Limited,
P.O Box 1823,
ARUSHA.

RE: APPROVAL OF TERMS OF REFERENCE FOR ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR ONGOING RENOVATION AND ESTABLISHMENT OF PRESIDENTIAL SUITES AT THE NGORONGORO SOPA LODGE WITHIN NGORONGORO CONSERVATION AREA IN NGORONGORO DISTRICT, ARUSHA REGION

Kindly refer to the above captioned subject.

2. The National Environment Management Council (NEMC) Office acknowledges receipt of the Scoping Report and draft Terms of Reference (ToR) for undertaking an Environmental Impact Assessment (EIA) study for the above-mentioned project that was issued with Project Registration Number EC/EIA/2024/3570 and that it falls under Type A Projects.

3. The Council has reviewed the submitted ToR and found that they are adequate, and can be used to guide Environmental Impact Assessment (EIA) study of this project. Therefore, the Council is emphasizing that you undertake EIA study as required by the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 which is read as one with the Environmental Impact Assessment and Audit Regulation, 2005 which hereinafter referred to as the "Principal Regulations." In this regard you will be required to submit to NEMC – NZ Office copies of EIA report accompanied by Non –Technical Summary both in Kiswahili and English for review process.

4. In addition, the EIA study should incorporate but not limited the following:

- i. The location of the project including at least four corner points for geographical coordinates and the physical area that are affected by the project operations, this should be supported by maps;
- ii. Detailed description of project activities / project components of the proposed project;

- iii. Submission of scoping report to all key stakeholders such as TANAPA, UNESCO and TAWIRI requesting them to submit comments directly to NEMC. During the submission of the said document, you will have to ensure that the departure institution signs form (s) with details of the proposed project which y will be appended in the EIA report.
- iv. Consultations of all key stakeholders such as United Nations Educational, Scientific and Cultural Organization (UNESCO); Tanzania Wildlife Research Institute (TAWIRI); Internal Drainage Basin Water Board (IDBWB); Regional Fire and Rescue Force; OSHA (Zonal Office); Tanzania Meteorological Authority (TMA); and respective Local Government Authority and all proposed project neighbours;
- v. Clearly addressed views and concerns of the consulted stakeholders. Signatures of all consulted stakeholders against his / her **name**. The forms must indicate the **date** of signing;
- vi. Clear Explanation on the amount and type of wastes to be generated and its management mechanisms during all phases of the project implementation;
- vii. Clear wastewater management and its technology and design;
- viii. A site layout plan showing proposed project components;
- ix. Detailed engineering and architectural designs as approved by the relevant authority;
- x. Necessary safety measures at the site throughout the project life span are incorporated in the report;
- xi. Compliance status of all applicable Legal and Policy frameworks and their respective requirements;
- xii. Appended relevant permit / licenses /certificates for the proposed project;
- xiii. Original signatures of registered EIA experts, and acknowledgement for all unregistered team members; and
- xiv. Approved Terms of References (ToR).

5. The Council will inform you to organize the site verification visit to the proposed project area before the review meeting of which transport to and from the proposed project site will be provided by the proponent.

6. In case you need any clarification on this matter do not hesitate to contact us through the Mobile Phone No. 0655 115 830.



Benjamin Dotto
ZONAL MANAGER

Appendix 11: Approved Terms of Reference for Conducting the Current EIA

1.0 INTRODUCTION

In response to an application, which the Consolidated Tourist and Hotels Investment Limited submitted to the NCAA requesting for a permission to clear a site for the purpose of constructing the proposed new presidential suites with an area leased to the Company at the existing Ngorongoro Sopa Lodge area, the NCAA through letter with reference number BE.76/341/11/39 dated 25th May, 2024 directed the investor to conduct an EIA of the proposed project before permission was granted to start site clearance.

The Ngorongoro Sopa Lodge, which is located to the eastern side of the Ngorongoro Crater in the NCA lies at the high cliff of the Ngorongoro Crater rim within the Northern Highland Forest Reserve in the Ngorongoro District, Arusha Region. According to the NCAA Management Zone Plan (2021-2026) the NHFR is part of the Catchment Forests Zone, which is defined as a core conservation zone. Nonetheless, the Ngorongoro Sopa Lodge started its operations in 1992 when the NCAA had no approved General Management Plan and the Environmental Management Act, Cap. 191 was not enacted yet. An Initial Environmental Audit that was conducted in 2015 determined that to a large extent over the years of its operation, environmental conservation was highly observed to the extent that degradation at the site was not alarming. The audit however, recommended some improvements most of them were related to technological advancement.

Since 2015 the Lodge management engaged in various improvements largely those related to water and energy saving techniques, solid and liquid management systems and services that aimed at increasing the visitors' enjoyment and satisfaction on one hand, and increased working conditions and welfare to the employees on the other side. During the Covid-19 pandemic, the Lodge was closed down followed by the conduction of intensive renovation to the guest rooms, demolishing the main house for the purpose of its reconstruction and the Management proposed to add new presidential suites to be constructed within the already leased piece of land for the purpose of increasing the lodge's affinity.

The Consolidated Tourist and Hotels Investment Limited was incorporated under the Company's Incorporation Act, Cap. 212 on 23th March, 1988 with certificate number 14992 to conduct hospitality business in the country including operation of lodges, hotels, resorts and tented camps as well as tour operation. It possesses a tax payer's certificate number 100-169-487.

To comply with the EMA Cap. 191, the Environmental Management (Environmental Impact Assessment and Audit) (Amendments) Regulations, 2018 read together with the "Principal Regulations"; the Environmental Impact Assessment and Audit Regulations, 2005 and the NCA Private Concession Policy, Strategy and Procedures (2019-2024), the Company commissioned Registered and Practicing environmental experts namely Dr. Victor A. Runyoro and Mr. Gerald X. Gisiput to conduct an Environmental Impact Assessment (EIA) study of the proposed project.

2.0. OBJECTIVES OF CONDUCTING ENVIRONMENTAL IMPACT ASSESSMENT

The objectives of conducting the EIA are generally to:

- (i) Determine how will the project activities and processes conform to environmental management practices and environmental quality standards;
- (ii) Provide a mechanism to learn from experience, and to refine the design and implement procedures of the project in a manner that mitigates adverse environmental impacts;
- (iii) Improve the project activity's compliance with environmental legislation and regulations such as air emission, effluent and waste management and operating standards;
- (iv) Predict impacts to be caused by the project activities and suggest possible mitigation measures and enhancement actions early prior to commencing implementation including emergency response planning, monitoring, reporting system and planning for future environmental performance;
- (v) Prevent damage and tendency for environmental damage and use the predicted impacts and the EIA recommendations as basis for improving the performance of environmental and social management plan and environmental assessment process;
- (vi) Improve resource use through reduction in material utilization, minimizing waste and identifying recycling opportunities; and,
- (vii) Suggest actions undertaken or needing to be undertaken by an organization or activity to meet environmental goals such as sustainable development, recycling and efficient use of resources.

Specifically, this EIA intends to improve and update existing baseline information upon which subsequent environmental control audit studies shall be based. To achieve that, the study is expected to establish implementation procedures, the results of which will enhance the search for effective solutions to environmental problems to be faced by the Proponent in order to facilitate management control of environmental practices.

3.0. SCOPE OF WORK

When conducting this EIA study, environmental experts shall ensure that an appraisal of all project activities is considered. Environmental regulatory and administrative frameworks, environmental health and safety measures and sustainable use of natural resources will be given adequate consideration. The assessment will result into the preparation of an ESMP and an EMP. This EIA shall mainly conduct the following tasks:

Task 1: Description of the project

Environmental experts shall provide a brief description of relevant parts of the proposed Lodge' face-lifting using maps where applicable of appropriate scale and include the following:

- ✓ Location;
- ✓ General layout, size and capacity;
- ✓ Project objectives and justification;
- ✓ Operation activities including those, which will take place at the Lodge and areas of influence and give a record of all significant environmental risks to be associated with such activities;
- ✓ Staffing;
- ✓ Safety and health protective gear;
- ✓ Facilities and services;

- ✓ Life span of the project; and,
- ✓ Decommissioning plan.

Task 2: Description of the existing environment

Environmental experts shall verify the level of compliance by the Proponent with the environmental management plan and forecast other impacts by assembling, evaluating and presenting baseline information on relevant environmental characteristics of the project area. Information on any anticipated changes as the project operation progresses shall be included. The areas of study that show critical information for this project category or which is relevant to it, shall be modified if need arises over the course of this EIA study. These shall include but not limited to:

- (i) **Physical environment:** This shall cover geology, topography, soils, climate, air quality, surface and underground water, existing sources of air emissions, existing water pollution discharges and receiving water quality.
- (ii) **Biological environment:** Included shall be flora, fauna, rare or endangered species, ecologically important or sensitive habitats, significant natural sites, species of commercial importance and species with potential to become nuisance, vectors or dangerous organisms within the project site and potential area of influence of the project.
- (iii) **Socio-cultural environment:** This shall consider aspects related to human population, land use, existing operational activities, employment, goods and services provided, recreation, gender issues, cultural and historic properties, and aspirations and attitudes of local community towards the project.
- (iv) **Health and Safety issues:** Views on health and safety issues shall be examined and sought from the project employees, local and potentially affected communities and prepare a list of health and environmental concerns of the past and on-going activities.

Monitoring programs, parameters and procedures known by the Proponent for all the above environmental and social characteristics with respect to control and corrective actions in case of emergencies, incidents and accidents and the likelihood of future occurrence of incidents and accidents shall be examined.

Task 3: Policy, administrative and legal frameworks

Environmental experts shall review the Authority's and national guidelines as well as national policies and legislation, and international conventions, treaties and agreements that are relevant to the project. The report shall specifically describe but not limit itself to regulations and standards governing environmental quality, safety and health, sustainable use of natural resources, customer satisfaction, local people's livelihoods, protection of sensitive areas and protection of endangered species at the local, regional, national and international levels. The objective of this section will be to evaluate the Proponent's knowledge and awareness of, and responsibility for application of relevant policies, laws, administrative/institutional conditions locally, nationally and internationally.

Task 4: Analysis of alternatives to the project

The EIA study shall identify and describe alternatives that shall be considered in the course of project operation, which may achieve the same objectives. When looking into alternatives,

design and technology shall mainly be considered. Once alternatives have been identified and assessed, environmental experts shall compare those alternatives in terms of potential environmental and social impacts, capital and operating costs, suitability under local conditions and institutional and monitoring requirements and recommend the most suitable one.

Task 5: Identification, analysis and assessment of impacts

All potential impacts both negative and positive shall be considered by environmental experts. This will entail determination of the magnitude, spatial, temporal, extent and likelihood of impacts, value of the affected environment, likely degree of recovery of the affected environment, level of public concern and political repercussions. In the analysis a distinction shall be made between significant positive and negative, direct and indirect, immediate and long term, unavoidable and avoidable, and reversible and irreversible impacts. Wherever possible, the EIA study shall clearly address cumulative and residual impacts. Identification, prediction and analysis of impacts shall be made for all phases of the project including pre-construction, construction, operation and decommissioning. Issues listed below but not limited to, shall be examined thoroughly:

- (a) Destruction of ecological sensitive areas;
- (b) Pollution to the soil, air and water on site and downstream;
- (c) Increase in run-off due to vegetation clearance and the resulting soil erosion and sedimentation;
- (d) Interference with traditional way of life and potential for introduction of transmittable diseases in particular HIV/AIDS by immigrants;
- (e) Solid and liquid waste management;
- (f) Levels of energy use;
- (g) Levels of water use;
- (h) Effects of noise, dust, vibration and gas emissions to surrounding environment;
- (i) Cumulative and residual effect of improper management of waste and overutilization of resources particularly the water;
- (j) Employment creation;
- (k) Revenue and other benefits to the NCAA, the Ngorongoro and Karatu District Councils and the Central Government;
- (l) Services to be provided to clients;
- (m) Health and safety measures;
- (n) Emergency preparedness and the role of staff in disaster response;
- (o) Record keeping and communication; and,
- (p) Off-site issues of critical concerns.

Task 6: Mitigation measures

Environmental experts shall analyse possible control mechanisms in order to suggest cost-effective measures for minimizing or eliminating activities, which are likely to cause negative environmental and social impacts, actions for enhancing beneficial impacts and those, which will ensure the workers' safety and health.

Task 7: Preparation of an ESMP and an EMP

Environmental experts shall prepare an ESMP and an EMP, which will consist of details on mitigation measures and clearly defining the responsibilities of various key players. The cost of implementing recommended measures shall also be estimated and presented in both plans.

Task 8: Resource evaluation or cost-benefit analysis

The EIA experts shall undertake a cost-benefit analysis by comparing advantages and disadvantages of alternatives and the positive and negative impacts including their enhancement and mitigation measures in terms of potential environmental outcomes, capital and operating costs and suitability under local conditions and recommend the best and feasible alternative.

Task 9: Development of the decommissioning plan

Although it is not expected that operations of the Ngorongoro Sopa Lodge will cease in the near future, the EIA study shall examine and determine what should be done at the time of the project coming to an end and develop a decommissioning plan.

Task 10: Preparation and submission of an Environmental Impact Statement

Environmental experts shall prepare and submit an EIS to NEMC with relevant recommendations from the Technical Advisory Committee and make a follow up with respective authorities to ensure that the clearance certificate is issued in accordance within time period as prescribed in the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018.

4.0. METHODOLOGY

The EIA shall be conducted and the report prepared in accordance with the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the “Principal Regulations”; the EIA and Audit Regulations, 2005. All stakeholders’ views and concerns shall be included in the EIS and evidence including signatures of all individuals to be consulted shall appear against their names and appended to the final report. A range of stakeholders’ involvement ensures the capturing of their views and concerns regarding the development in question. Environmental experts shall therefore consult with all key stakeholders including, but not limited to:

- Ngorongoro Conservation Area Authority Management;
- Relevant Departmental Heads from the Ngorongoro District Council;
- Tanzania Wildlife Research Institute;
- Internal Drainage Basin Water Board;
- Fire and Rescue Force;
- Occupational Health and Safety Authority; and
- National Environment Management Council

5.0. THE EIA STUDY TEAM

The EIA experts shall include:

- An Ecological Economist who will be Team Leader;
- An Environmentalist; and
- A Health and Safety Expert.

6.0. REPORTING

The EIS shall contain measures that exist under the environmental management plan of the project to bring the undertaking up to an acceptable environmental standard and how environmental impacts will be addressed and controlled. The contents and format of an EIS shall be prepared and submitted according to the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the “Principal Regulations”; the EIA and Audit Regulations, 2005.

The Scoping report and the EIS shall be submitted electronically to the Environment Management Council (NEMC) concurrently with three (3) hard copies of the scoping report for review purpose and three (3) copies of the EIS to be accompanying with same number of copies of the stand-alone non-executive summary in both English and Swahili languages to ascertain incorporation of the Technical Advisory Committee (TAC) comments and submission to the Minister responsible for Environment.

7.0. ASSIGNMENT PERIOD

Preparation and submission of the Scoping report and Terms of Reference (ToR) shall be completed within fifteen (15) days after conducting the first site visit if all documents for registration including proof of land ownership and architectural drawings will be provided in time. Draft EIS shall be prepared and submitted to NEMC within thirty (30) days after the Scoping report and the ToR have been reviewed and approved by NEMC. The final EIS shall be prepared and submitted to NEMC within fifteen (15) days after environmental experts have received written recommendations/comments from the TAC. Upon submission of the final report by NEMC to the Minister for Environment, environmental experts shall assist the Proponent on the follow up to ensure that the environmental clearance certificate is issued in accordance with the time period as prescribed in the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018 read together with the “Principal Regulations”; the EIA and Audit Regulations, 2005.

Appendix 12: Hydrogeological and Geophysical Survey for Sinking a Borehole

MMJ DRILLING &CONSULTANCY LTD

2023



*SUBMISSION OF HYDROGEOLOGICAL AND GEOPHYSICAL SURVEY REPORT AT
CONSOLIDATED TOURIST & HOTEL INVESTMENT LTD*

MMJ DRILLING &CONSULTANCY LTD

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EXECUTIVE SUMMARY

This report presents the results of the groundwater survey undertaken by MMJ DRILLING AND CONSULTANCY LTD on behalf of CONSOLIDATED TOURIST & HOTEL INVESTMENT LTD. The groundwater survey was undertaken from the 18th to 19th December 2023. The objective of this study was to determine the potential areas for borehole drilling and comment on aspects of depth to potential aquifer, aquifer density, aquifer thickness and type, as well as water type for selected areas. This site is within the jurisdiction of the Internal drainage basin Water Board

MMJ DRILLING AND CONSULTANCY LTD employed a combination of electrical resistivity and the magnetic techniques respectively to undertake this geophysical survey. As a result, a four-step methodology was adopted for this study. Firstly, the long ranger machine was used to scan the area of interest with highest amount of water at a diameter of up to 1000 meters and a depth of up to 500 meters. In the second step, a geophysical machine with the ability to scan an area to the depth of 500 meters was employed to scan in details the water potential areas identified in step one. The scanning exercise provided data in relation to aquifer thickness, aquifer density and water type. The third step, involved the use of imaging system, which provides the results in three dimensions (3D) of the step two outputs, as well as precisely locating point for borehole drilling. The fourth step uses a 1-D method, which is a Terrameter - Electrical Resistivity Tomography Machine (ERT) to confirm the aquifer type (channel or basin) and thickness as established in step three, as well as establishing the lithology of the area, which will then inform on the best drilling method that can be used.

In general, results from this groundwater survey indicate that all surveyed locations have good groundwater potential. The selected points namely point A and B for Sopa Lodge, Point have desirable water type, aquifer depth, aquifer thickness, aquifer type and density respectively for borehole drilling. In addition, these points are located at a sufficient distance away from potential sources of pollution in compliance with the Guidelines for Groundwater Exploration and Well Drilling, 2019. It is our recommendations that; (i) a water abstraction permit should be sought from the Internal drainage basin Water Board Office before commencing any borehole drilling works to comply with section 54 of the Water Resources Management Act No.11, 2009 and Regulation 20 (1) of Groundwater (Exploration and Drilling) Licensing Regulations, 2013 (ii) borehole drilling works should be done by a licensed drilling contractor under the supervision of the Consultant in compliance with the part 3.2 (A) of the Guidelines for Groundwater Exploration and Well Drilling of 2019; and (iii) upon successful completion of the drilling work, a sample of the water should be taken to a registered water quality laboratory for a full physical, chemical and bacteriological analysis before the water is put to any use



Table of Contents

Contents

EXECUTIVE SUMMARY 1

LIST OF FIGURES 3

LIST OF TABLES 4

LIST OF ACRONYMS AND ABBREVIATIONS 5

1.0 INTRODUCTION 1

1.1 Project Background 1

1.2 The Consultant..... 1

1.3 MMJ Groundwater Exploration Equipment's and Methods..... 1

1.4 Objective and Scope of the Assignment 2

2.0 PROJECT DESCRIPTION AND METHODOLOGY 3

2.1 Project Location and River Basin Jurisdiction..... 3

2.2 District Hydrogeological Settings 4

2.3 Methodology Adopted for the Study 4

2.3.1 Equipment and methods used 4

2.3.2 Survey Coverage during this study..... 6

2.4 Data Processing and Analysis 7

2.4.1 The long ranger data processing..... 7

2.4.2 The 3D Imaging System 7

2.4.3 The 1-D Graph Results 8

3.0 RESULTS AND DISCUSSION 9

3.1 Results from Sopa Lodge..... 9

3.1.1 3D Imaging System Results for POINT "A" 9

3.1.2 3D Imaging System Results for POINT "B" 12

3.1.3 1-D Graphs Results..... 14

4.0 CONCLUSION AND RECOMMENDATIONS 15

4.1 Conclusion 15

4.1 Recommendation 29

REFERENCES 30

LIST OF FIGURES

Figure 1: Map showing administrative location of the project area..... 4

Figure 2: Geological Map of the Study Area by Geological Survey of Tanzania (GST) 4

Figure 3: Survey coverage at Ngorongoro District 7

Figure 4: Detailed Survey Results of Groundwater at Point "A" 9

Figure 5: Type of water and Best Drilling location at Point "A" 10

Figure 6: Detailed Survey Results of Groundwater at Point "B" 10

Figure 7: Type of water and Best Drilling location at Point "B" 11

Figure 8: Interpreted Results for VES - 01 12

LIST OF TABLES

Table 1: Summary of MMJ groundwater survey equipment and methods 2

Table 2: Parameters processed by the 3D imaging system 7

Table 3: Results from Sopa Lodge Surveyed Points 9

Table 7: Recommended minimum distances of a proposed drilling site from a source of pollution 27

Table 8: Ranking of the proposed sites for borehole development 28

LIST OF ACRONYMS AND ABBREVIATIONS

1-D	One Dimensional
2-D	Two Dimensional
3D	Three Dimension
DC	Direct Current
ERT	Electrical Resistivity Tomography
GPS	Global Positioning System
Km	kilometer
K Ω	kilo ohm
M	meter
m ³	meter cubic
PPM	Parts Per Million
Rg	ground resistance

1.0 INTRODUCTION

1.1 Project Background

MMJ DRILLING AND SONSULTANCY LTD, a licensed groundwater survey and Drilling by the Department of Water Resource of the Ministry of Water, was commissioned by CONSOLIDATED TOURIST & HOTEL INVESTMENT LTD (herein referred as "The client") to undertake groundwater survey. The objective of this study was to determine the potential area for borehole drilling and comment on aspects of depth to potential aquifer, aquifer density, aquifer thickness and type as well as water type.

For this purpose, the relevant available hydrogeological information of the project areas has been analyzed and a groundwater survey was done. Therefore, this report presents the findings of the study based on the groundwater survey conducted from 18th to 19th December 2023

1.2 The Consultant

MMJ DRILLING AND SONSULTANCY LTD is an acronym for 'Water and Environmental Management Consultants. MMJ DRILLING AND SONSULTANCY LTD is a Tanzania-based multi-disciplinary consulting firm formed within the philosophy of multi-disciplinary and integrated approaches to sustainable development. MMJ DRILLING AND SONSULTANCY LTD deals with provision of Engineering and Non-Engineering (Multidisciplinary) consultancy services. The company is committed to offering a holistic and integrated approach to sustainable development by combining modern techniques related to Water Sciences and Geographic Information System (GIS).

The Company originates from a group of university researchers who focused on the science of Water management, River hydrology and hydro-geology, Today the company is managed by professionals with an average of over nine years (i) River Basins, Water Resources Engineering and Environmental Studies(ii) Modeling of Surface Water/Groundwater Systems and Mining Areas.

1.3 MMJ Groundwater Exploration Equipment's and Methods

To date MMJ drilling and consultancy LTD has undertaken numerous groundwater survey points. These points are distributed in all nine river basins in Tanzania. Our clients have ranged from Donors, Government, Non- government Organizations, Water Utilities and Private companies/developers and individuals.

MMJ Consult is fully equipped for groundwater survey and Drilling in terms of experts and equipment used.

quality of water, quantity and nature of aquifer in which the water is situated. The table below provides the summary of the equipment and the groundwater methods, which are used.

Table 1: Summary of MMJ groundwater survey equipment and methods

S/N	Equipment	Function	Methods Used
1	ABEM	This is a 1D machine and it is used to measure the availability of water in an area of interest.	This uses Electrical Resistivity Method
2	GROUND SCAN 500	This is a 2D machine and it is used generate tomography of an area of interest.	This uses Electrical Resistivity Method
3	GEM's PROTON MAGNETO METER AND POOL FINDER PLUS	This is used to locate the most suitable area where the water could be in your area of interest. It has an ability of locating best location up to a distance of 1,000m by 500m deep	This uses "Magnetic Field" through which the calcium, magnesium and other water constitute with high concentration is detected in an area to locate water.
4	GROUND SCAN 500	This is a 3D machine which is used to precisely locate the best location to be drilled, the depth to be drilled, the thickness of the aquifer, the percentage of water and rock, the percentage of salinity Vs fresh water (quality of water)	This uses a combination of methods both the Electrical Resistivity and the Magnetic Method

1.4 Objective and Scope of the Assignment

The general objective of this assignment was to conduct a detailed groundwater survey to determine potential areas for borehole drilling at CONSOLIDATED TOURIST & HOTEL INVESTMENT LTD in Ngorongoro District council in Arusha Region.

To accomplish the aforementioned general objective, the consultant undertook the following;

- Desk and Preliminary analysis of the project area
- Detailed groundwater survey using modern equipment of groundwater detection and acceptable methods
- Data analysis, interpretation, and reporting

2.0 PROJECT DESCRIPTION AND METHODOLOGY

2.1 Project Location and River Basin Jurisdiction

The surveyed points are located near to Ngorongoro crater in Ngorongoro District Council in Arusha Region. The site/point for drilling borehole located in the Internal drainage Basin Water Board.

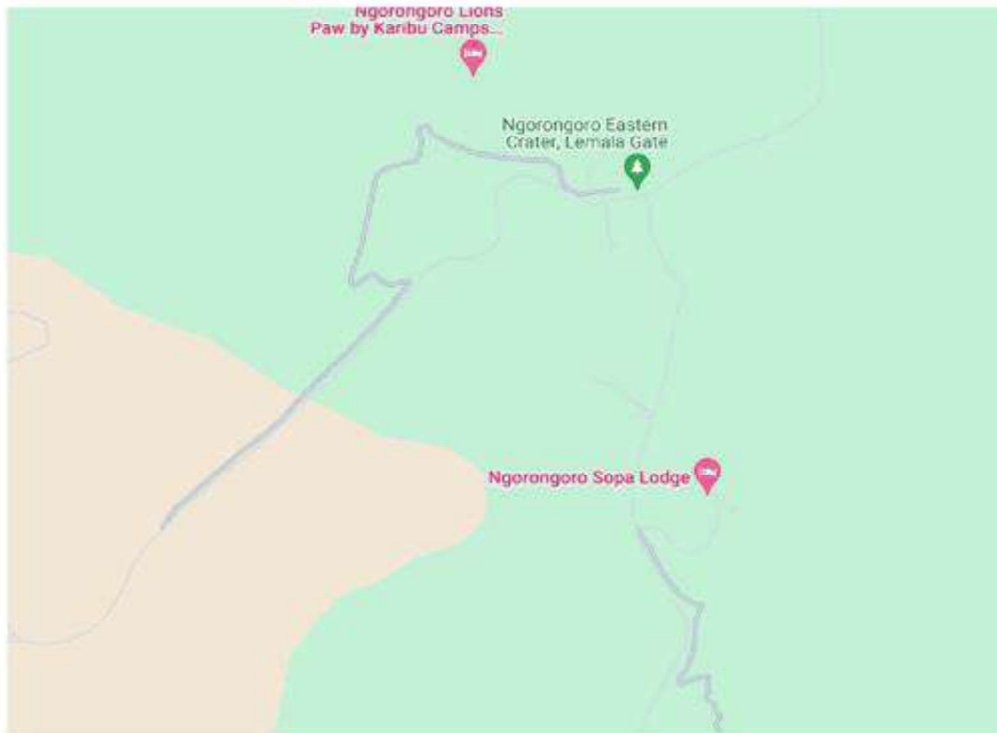


Figure 1: Map showing administrative location of the project area

2.2 District Hydrogeological Settings

The project area geology is of Precambrian Mobile/orogenic belts as per Geological Survey of Tanzania. Generally, the aquifer productivity of the surveyed locations is in basement which varies from low to moderate (see figure 2 below). The area is characterized by gentle topography and clay soil type.



Figure 2:

2.3 Methodology Adopted for the Study

2.3.1 Equipment and methods used

The groundwater survey applied during this study utilized the most recent technology of groundwater search. As described earlier, at MMJ, equipment which uses the most recent technology of ground water detection are available and they were applied. Generally, All equipment are employed in any groundwater survey by MMJ and each of this equipment have its function in the entire process of groundwater search. The equipment's make the groundwater survey at MMJ to be a four-step process as described in the next paragraphs:

STEP ONE: The very first step involves traveling to the site and observing the site conditions to establish factors such as soil types and the topography of the area. This is followed by the setting up of the first equipment known as POOL FINDER PLUS. The long ranger machine is used to scan the area of interest at a diameter of up to 1000 meters and a depth of up to 500 meters. It uses the technology of ionic field radiation, which has been decomposed in water over the long period in the particular land, and it is regularly to the magnetic field in the North and South. As such, in the scan process this machine will indicate in precedence the area with highest concentration of dissolved ionic fields in the survey area. The ionic fields which are detected by the machine mainly comes from calcium and magnesium which includes non-silicate metals, Silicate metals, Fluorite, Anhydrite, Gypsum, Dolomite, Alpatite, Inorbit, Pyroxene, Amphibole etc.



Once the area with highest ionic field (highest water amount) is identified by the machine the second step is initiated on the location which has been identified to have the highest amount of water. This second step is a geophysical survey which uses the principles of resistivity and magnetic field as describe below:



STEP TWO: In this step, a geophysical machine is employed to scan at detail the areas identified by the machine in step one. This Geophysical machine is one of the best, recent with most powerful systems to find the water and display fast and accurate results. This machine provides most of the needed data by the groundwater explorer. Some of the key data which it provides include depth to groundwater (aquifer thickness), water density, salinity (fresh - salty - very salty) and rock percentage. This geophysical machine has the ability to scan the survey area to the depth of 500 meters. It uses the principle of magnetic and electrical resistivity to scan the ground. The scanning is done around four probes which feeds the machine with the ground data at the specified depth limit.

The scan process is done at least three times for each location identified to have high concentration of water in step one. The purpose of three times scan is to establish the setup situation of the ground water whether it is in stream form or basin form. The two forms are identified as follows:

- (a) If all scan results indicate the same range of groundwater depth - then the available water is in form of a basin,
- (b) If there are different depths of water identified it means the water available is in form of different streams

STEP THREE: This step involves the use of the imaging system which provides the results in three dimensions (3D). The 3D imaging system allow the explorer to see more accurate details of the presence of underground water layers as a three-dimensional image as well as to show the water analysis results. It also precisely indicates the best place for drilling - meaning the location, which contains the largest amount of water. The depth of water detected measured in meters. A pie chart showing the ratio of water density, rocks, and salinity of water is also displayed by the 3D imaging system.

STEP FOUR: The fourth step is the use of the Terrameter - Electrical Resistivity Tomography Machine (ERT) or 1-D machine (Vertical Electrical Sounding - VES). This step is only used on the selected best points for drilling. The purpose of using these are twofold. First is to confirm the type (channel or basin) and thickness of the aquifer as established in STEP THREE. Secondly is to establish the lithology of the area which will then inform on the best drilling method which can be used. There are a number of drilling methods which exists. Decision on which methods to be used depends on the lithology and formation of the area to be drilled. Some of the common drilling methods, which exists, include the following:

- Air Rotary Drilling Method,
- Bucket Auger Drilling Method
- Cable Tool Drilling Method
- Down the Hole Drilling Method
- Reverse Circulation Drilling Method
- Mud Rotary Drilling Method

2.3.2 Survey Coverage during this study

In every surveyed location, the long ranger machine is used to identify several points of water concentration, if are available. These identified points are then recorded for further scanning and scrutinized by the geophysical machine and the 3D imaging system. The list of all identified points by the long ranger is that is referred as the survey coverage of the study. The google map below shows the geographical locations and distribution of surveyed points in the study area.



2.4 Data Processing and Analysis

The data processing collected using the equipment presented in the above methodology is threefold as described below:

2.4.1 The long ranger data processing

The long-range data is processed almost in real time since its analysis is done in the field. As clearly described in the methodology, the results of the long ranger are an input data to the geophysical machine and to the 3D imaging system. As such, the ultimate results are to precisely inform the best location to which the geophysical machine should be placed for scanning.

2.4.2 The 3D Imaging System

The three-dimension imaging system data is also analyzed. The imaging system provide the following results when it is commanded to run.

Table 2: Parameters processed by the 3D imaging system

S/N	Parameter	Unit Measure
1	Type of water	Fresh, salty, very salty
2	Amount of water in percentage	Less than 50% - indicate small quantity of water
		50% - 60% - Indicate medium quantity of water
		60% - 70% - Indicate Good Quantity of water
		70% - 80% - Indicate Marginal Huge Quantity of water
		80% - 100% - Indicate Huge Quantity of Water



S/N	Parameter	Unit Measure
3	Rock percentage	Amount of rock in the aquifer (in %)
4	Depth to aquifer	Aquifer thickness (meters)
5	Best drilling location	Location in reference to the four probes inserted in the ground

2.4.3 The 1-D Graph Results

The 1-D (Vertical Electrical Sounding) survey data is normally assembled in form of electrical resistivity purposely for easy filtering and elimination of noisy data. After elimination of outliers, apparent resistivity data are inverted to obtain resistivity data for interpretation purposes. The apparent resistivity is modelled using a special software IP2Win generated data. The model results are normally generated Graphs which clearly demonstrate the hardness of the formation from the survey to the target drilling depth. This makes it easy for the explorer to decide on the drilling methods to be applied.

3.0 RESULTS AND DISCUSSION

3.1 Results from CONSOLIDATED TOURIST & HOTEL INVESTMENT LTD

At CONSOLIDATED TOURIST & HOTEL INVESTMENT LTD total of 2 points using 3D and 2 points using a 1D machine were surveyed. The results from the 3D imaging system for the most potential and non-potential points in the area are as summarized in the table below. The most potential water points are selected based on the following criteria namely: (a) Type of water; (b) Aquifer thickness and (c) Drilling depth. The table below shows the different surveyed water points in the area. Based on the aforementioned criteria, the most potential and non-potential points are shown in the table below. Further, these most potential and non-potential points are analyzed in details using the 3D imaging system as presented in the next sections:

Table 3: Results from Sopa Lodge Surveyed Points

Point Code	GPS Coordinates		Type of Water	Aquifer Thickness (m)	Depth (m)	Quantity of water (%)
	Easting	Northing				
Point A	0797424	9652478	Slightly salty water	50	100-160	90-97

3.1.1 3D Imaging System Results for POINT "A"

The detailed outputs of the 3D imaging system of POINT "A" indicated that the area has one aquifer; the details of the aquifer are presented from figure 4 to figure 5 below

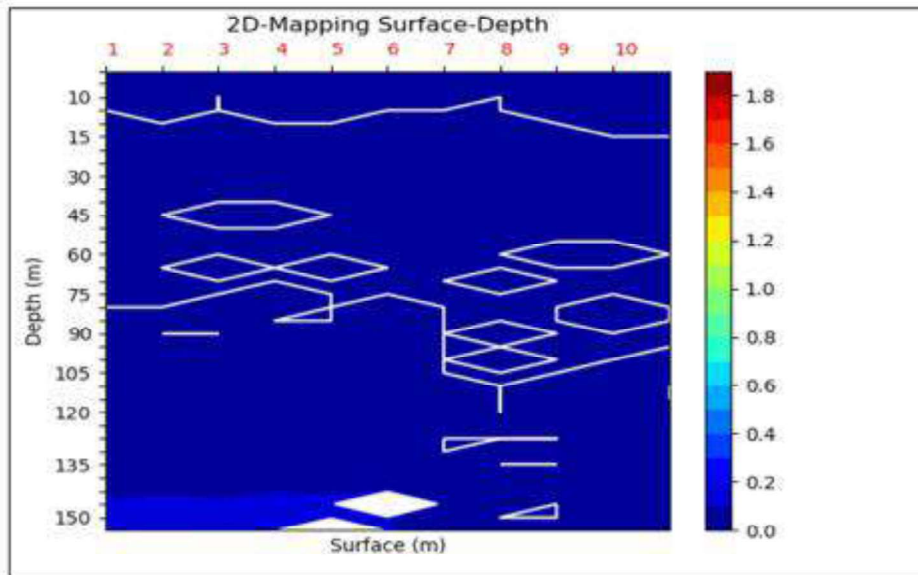
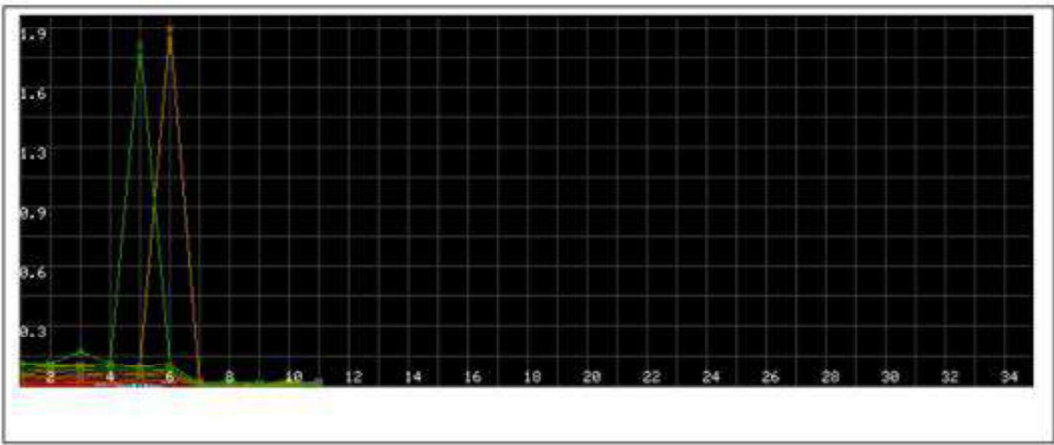
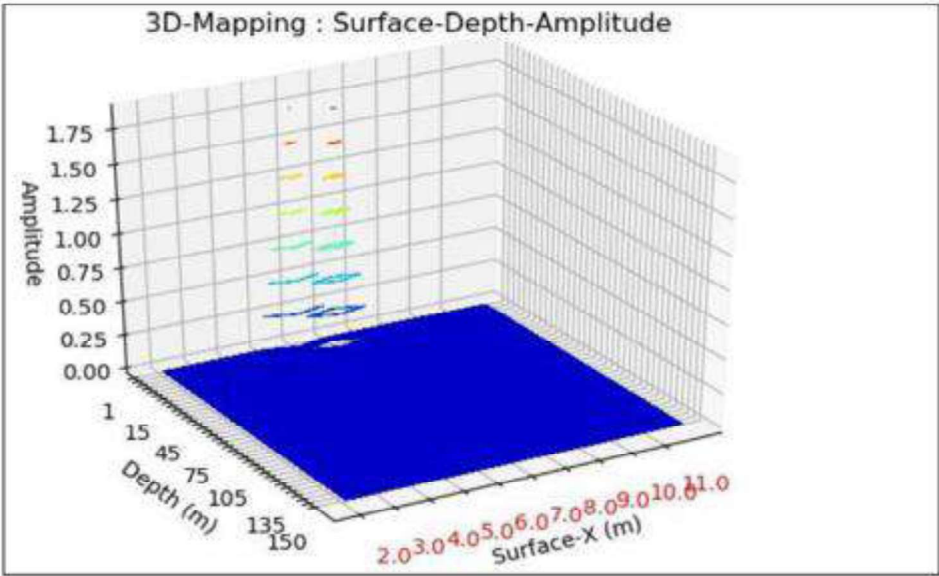


Figure 4: Detailed Survey Results of Groundwater at Point "A"



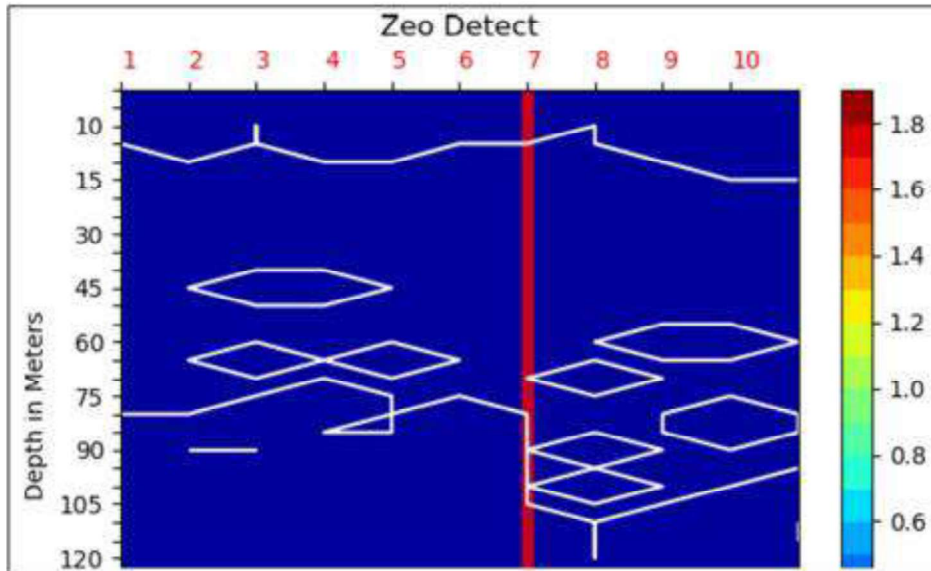


Figure 5: Type of water and Best Drilling location at Point "A"

UTM 36m

0797424	9652478
---------	---------

Surface Type: Level Ground

Source 1 : 150 (Mts)

Reports are generated based on the unit's inbuilt sensors which survey the geological structure, geography of the area and the required tolerance. Then the equipment does the necessary calculation to arrive at result. Depending on the rock permeability factor, the quality, quantity and quantum of water is projected. This projection is true to (90 to 97 %), except where some Morphological Structure may be in varied condition or varied condition or any human errors encountered during survey.



3.1.2 3D Imaging System Results for POINT "B"

The detailed outputs of the 3D imaging system of POINT "B" indicated that the area has one aquifer; the details of the aquifer are presented from figure 6 to figure 7 below.

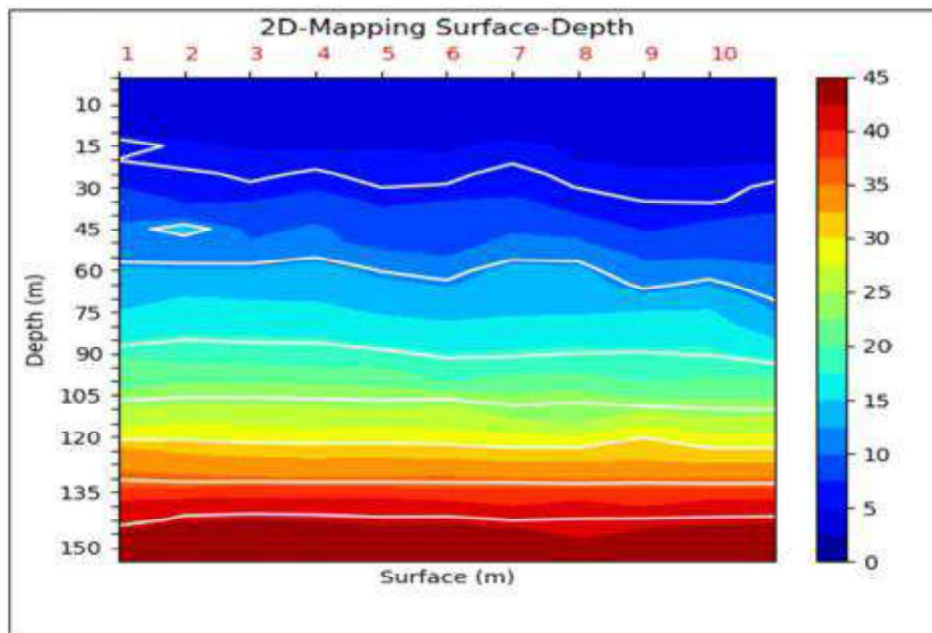
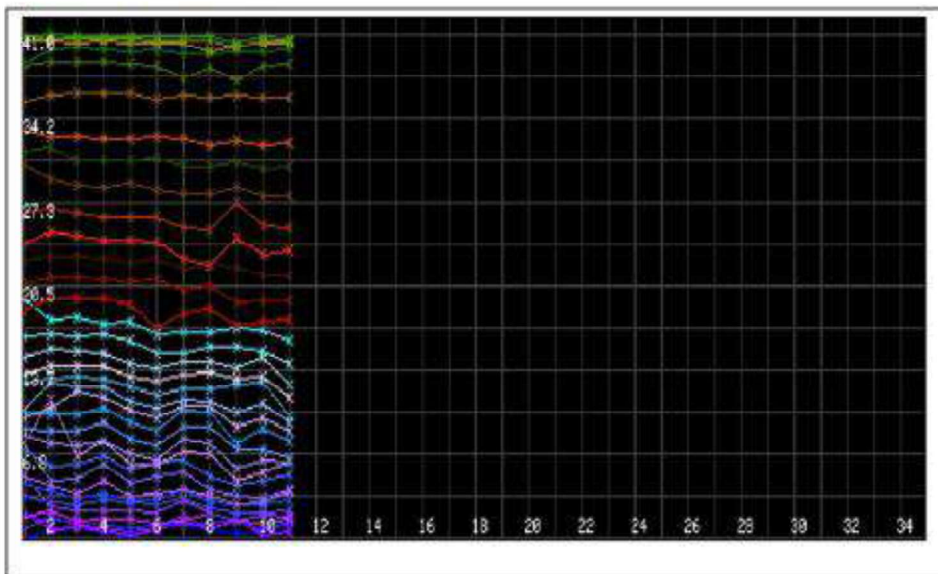
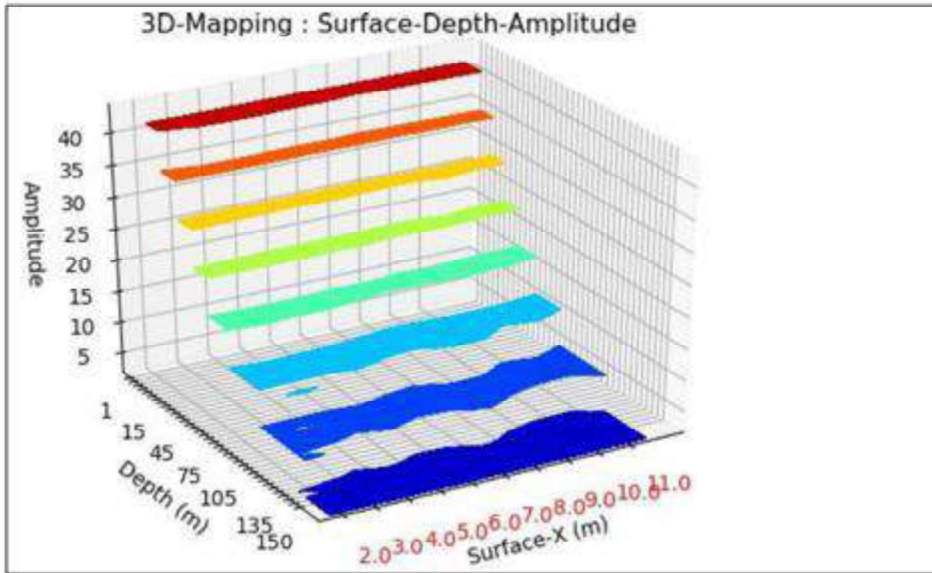


Figure 6: Detailed Survey Results of Groundwater at Point "B"

The results at point "B" indicate that the water density is 86% which is in the category of huge quantity of water. The solid rock content percentage is 49% which is a medium percentage of solid matter in the aquifer. The water salinity is 4351 PPM (parts per million (PPM), which is slightly salty water. The best drilling location is indicated in figure below. This point was marked using a beacon in the field and a GPS coordinate was taken and recorded as presented in this report.



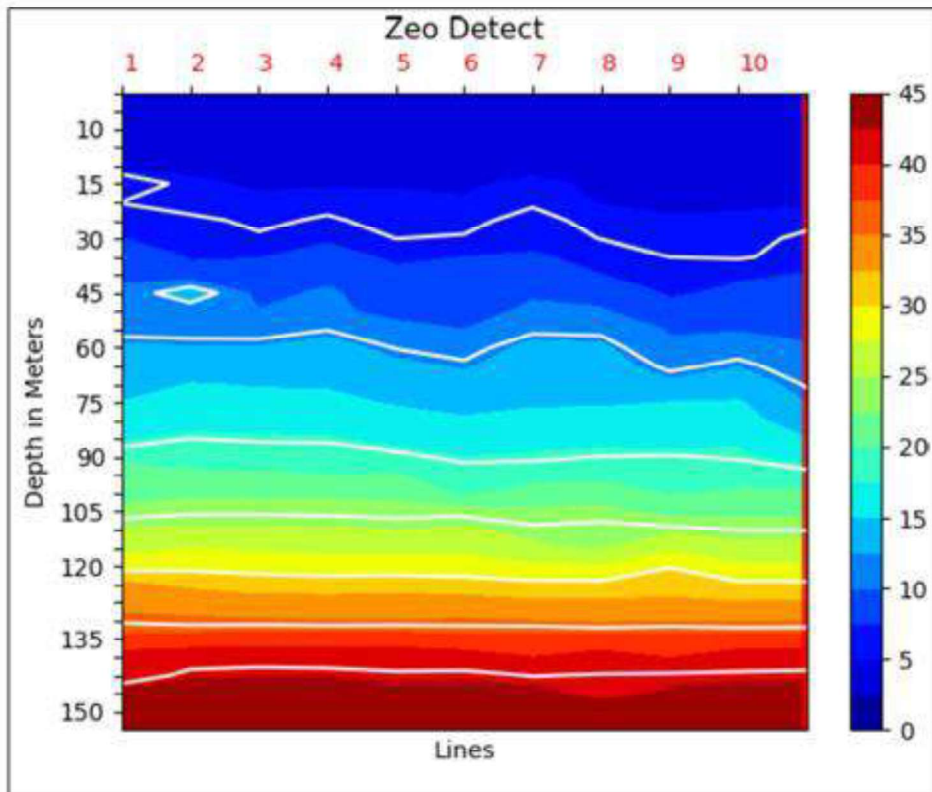


Figure 7: Type of water and Best Drilling location at Point "B"

3.1.3 1-D Graphs Results

The figure below is the result of Vertical Electrical Sounding (VES) measured at POINT A of the 3D imaging system. Like mentioned earlier, the purpose of undertaking VES survey is to confirm the aquifer type as well as to establish the nature of the rock formation so as to recommend the best drilling method to be used during drilling. From the figure below, based on the nature of the curve it is clear that the aquifers are in weathered/fractured formations. The curve is in three-layer case of the H- type. The first uppermost layer about 6.5m thick characterized by resistivity value of 250.1 ohm-m representing dry sand soil. The next layer of about ~18.7m thick characterized by resistivity value of 52.6 ohm-m, which represent formation of groundwater in weathered/fractured formations. The next layer is a hard rock which is represented by resistivity values of 536.1 ohm-m. Based on the result it appears that the Air rotary drilling technique will be the appropri

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

The combination of electrical resistivity and the magnetic method has been successfully used to determine groundwater potential points for borehole drilling in the study area. Based on the results from these methods it is concluded that the project areas are considered to have good groundwater potential. Further, the selected points are located at sufficient distance away from sources of pollution to prevent contamination of the borehole through groundwater flow or seepage in compliance with the Guidelines for Groundwater Exploration and Well Drilling, 2019 (refer Table 7). Therefore, the proposed points for borehole drilling are as presented in table 8 below

Table 7: Recommended minimum distances of a proposed drilling site from a source of pollution

S/N	Facility	Minimum Distance (m)	Observed Distance (m)
1	Animal pen	30	N/A
2	Burial site (cemeteries)	50	N/A
3	Informal vehicle services	20	N/A
4	Communal dumping sites	100	N/A
5	Abattoir	50	N/A
6	Domestic dumping site	30	N/A
7	River and lake	20	N/A
8	Laundry/washing slab	20	N/A
9	Roads, air strip and railway line	15	
10	Pit latrine	30	N/A
11	Dwelling house	10	N/A
12	Store for pesticides, fertilizers or fuel	100	N/A
13	Soak away and septic tanks	20	N/A

Note: Facilities, which are not within the vicinity, are denoted/termed as – not applicable (N/A)

Table 8: Ranking of the proposed sites for borehole development

Point Code	GPS Coordinates		Type of Water	Aquifer Thickness (m)	Depth (m)	Quantity of water (%)
	Easting	Northing				
Point A	0797424	9652478	Slightly salty water	50	100-160	90-97

Note:

1. Using the combination of all equipment's, the consultant has established that 1 location has high potentiality, while the remaining 3 locations have medium potentiality as shown on **table** above. However, the final depths of the boreholes to be drilled will depend on the geological observation and the amount of water during drilling. Thus, the drilling depths provided in ranges for each point, by the consultant, in this report may vary and hence observation of geological formation and decision during drilling remain a very important component for the successful development of these boreholes.

4.1 Recommendation

In view of the above it is recommended that:

- (i) It is recommended that the client can do a drilling at identified potential sites. However, a very careful monitoring schedule during the drilling process will need to be put in place. This will mainly include monitoring the profile/lithology of the area in accordance to the result of this survey. Also testing the salinity during the entire drilling period should be done
- (ii) Borehole drilling shall be done by a licensed driller in compliance with the part 3.2 (A) of the Guidelines for Groundwater Exploration and Well Drilling of 2019, and shall carry out the drilling activities in a professional manner observing general and technical requirements.
- (iii) The Client should engage the services of an experienced Consultant during drilling, installation and testing of the borehole. Apart from inspecting the quality of materials and ensuring that the drilling depth, well tests (yield and pump tests) and quantities of billed materials reported by the Contractor are correct, the main task of the supervisor is to guarantee that the borehole is completed according to sound and are of professional standards. **It has been proven that substandard drilling works can eventually reduce the productivity of a borehole.**
- (iv) A water abstraction permit should be sought from Internal Drainage Basin water Board before commencing any borehole drilling works. This is in accordance with section 54 of the Water Resources Management Act No.11, 2009 and Regulation 20 (1) of Groundwater (Exploration and Drilling) Licensing Regulations, 2013
- (v) The drilled borehole should be installed with appropriate casings (plain and screen). This is a cost-effective protection against collapsing and sediment ingress. Consequently, it will increase the **lifespan of the borehole, and reduce pump damages and maintenance costs.**
- (vi) Upon successful completion of the drilling work, sample of the water should be taken to an accredited water quality laboratory for a full physical, chemical and bacteriological analysis before the water is put to any use.



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Appendix 13: Emergency and Preparedness Response Plan: September, 2024

1. INTRODUCCION

The purpose of this emergency and preparedness response plan is to set guidelines for the safe, efficient and effective response to any emergency which may occur over the life cycles of the implementation of the Ngorongoro Sopa Lodge. The plan covers reporting procedures and containment of any incident which may result in injury, death and/or damage to the property or failure of any equipment. The plan puts great emphasis on the involvement of those who will be engaged in the project implementation process and all others who will be using the Lodge particularly with respect to getting information and instructions on how to respond to emergencies should they occur. Safety of visitors and the Lodge employees, which is treated as the priority in this plan, is of great significant. This is the reason why a detailed response plan has been developed to address issues, which include but not limited to:

- Ensuring that the correct response is made to any emergency situation by requiring all staff and visitors at the Lodge to become familiar with this emergency response plan.
- Making sure that all departmental heads and supervisors carry some sort of communication equipment including mobile phone or hand-held radio at all times while off the site to enable easy communication in the event of emergency. It is important that communication numbers for all supervisors are known to all the Lodge staff.
- Informing all staff present at the facility in the event of an emergency.
- Preventing confusion and making best use of available resources, in any situation by requiring staffs or supervisors to respond and handle all emergencies so as to enable the most efficient response.
- Ensuring that all contacts with emergency services are done by the management of the Lodge.

2. RESPONSE ON THE REPORT OF AN EMERGENCY INCIDENCE

The Lodge Manager or the delegate who will be on duty should do the following after receiving report of an emergency incidence:

2.1 Verify the Report: Confirmation on the accuracy of information shall be made after contacting other occupiers, the emergency services section or other reliable people.

2.2 Notify all Relevant People at the Lodge: By the quickest possible means the emergency services unit and the Lodge Manager shall be notified as well as all the people who will be present at the premises.

2.3 Assess the Danger Posed by the Emergency

- Use all senses to build a picture on what has happened and use that information to help decide the course of action;
- Communicate verbally to all stakeholders on the course of action decided to take;
- Observe on what is happening so as to decide on whether the danger has passed, increasing, coming closer or moving further away or the weather affects its progress in case of fire;
- Estimate how much time may be used to control the emergency or take alternative actions.

2.4 Act Based on the Assessment of the Danger

- Ensure that casualties if any, are not exposed to further injury or danger.
- Contain the emergency if safe to do so.
- Move people away from the danger area by the safest means.
- Refer to any specific procedures developed for the emergency.

Whether control of an emergency will be within the capacity of the Lodge personnel or support from other authorities will be needed, phone numbers for all important stakeholders should be available. In the time of an emergency, they should be notified especially regarding on whether the incidence is contained or more support is needed. Relevant authorities, which emergency phone numbers shall be available are; the Fire and Rescue Force, In-Charge of the Emergency services at the Lodge, nearby Medical Centre, Gas Supplier and the NCAA Protection Department

3 ROLES AND RESPONSIBILITIES

3.1 The Lodge Manager, Departmental Heads and Supervisors:

The Lodge Manager or the delegate who will be at the site will co-ordinate emergency and set up a command centre at the office of the Lodge Manager. The Manager or the delegate will liaise with emergency services and take control of responses. Other Lodge staff, if on site, will assist where necessary.

3.2 Departmental heads and Supervisors:

Whether the Lodge employees will be at the site or not and available departmental heads and supervisors believe the response is within their capacity, they shall contact the emergency services and implement the planned response. The Lodge Manager or the delegate must be notified as soon as practicable. Departmental heads and supervisors shall coordinate the rescue exercise at all times and prepare and safely undertake an orderly evacuation if advised to do so by the emergency services.

The supervisors shall ensure that medical forms and emergency medicines are available at the Lodge. Regardless of the time of the year, an emergency vehicle should be available all the time at the Lodge. This will allow 24 hours access for all emergency vehicles. All employees at the facility shall familiarize themselves with the procedure outlined in this plan. However, in all situations the personal safety of all employees and visitors shall be of the utmost importance.

4 ROUTINE INCIDENTS

4.1 First Aid

The Lodge Management shall be responsible both to providing first aid equipment and having suitably trained first aiders at all times. The Lodge employees should have knowledge of assisting and must be notified of all first aid assistance given while at the Lodge. The Lodge should also have access to radio communication.

4.2 Snake Bite

In case of snake bite, the pressure immobilization bandaging technique shall be applied while keeping the victim lying down at total rest because allowing movement of such a victim increases the chances of venom circulation. The resting victim must be monitored closely for any change in condition, including pulse rate, breathing rate and level of consciousness. All these shall be

done after immediately seeking assistance from the nearby medical centre and therefore waiting for the medical aider to arrive.

4.3 Electrical Failure

When there is a power cut, candles should not be used in accommodation areas as this may cause fire hazard. The Lodge Manager must call the leader in charge of power to determine the problem. The time period to lapse between the failure of electrical supply to normal lighting shall not exceed one second. This means that the major source of power for lighting must be synchronized with the back-up for automatic connection.

4.4 Water Loss

In case of water loss, the Lodge Manager shall be notified immediately, who in turn will communicate with in charge of water supply for immediate action.

4.5 Gas Failure

Absence of hot water or gas at the kitchen stove or oven may indicate trouble with gas supplies. If that happens, the house keeper should inform the Lodge Manager or the available delegate for undertaking investigation.

5 NON-ROUTINE INCIDENTS

In all major non-routine incidents, the office of the Lodge Manager will be the command Centre and all communication with the emergency services will take place in that office. Non-routine incidents include:

5.1 Wildfire

In case of wildfire, the Management will direct all staffs at the Lodge to leave the premises if relevant authorities declare a danger, which may be caused by the fire. In the event of fire emergency threatening the site, the Lodge Manager in cooperation with the supervisors and emergency services, will decide to leave or stay. The employees will be advised to evacuate the Lodge area only if safe to do so and on the advice of emergency service.

5.1.1 Wildfire threatening and unsafe to leave the site

The following procedures are drawn up on the premises that it is safer to remain at the Lodge than attempting to move in the face of a fire:

- The Lodge Manager or his delegate will sound an alarm. This will prompt all employees and visitors to quickly and calmly gather at the emergency assembly area if safe to do so.
- A head count of available employees shall be conducted by the supervisors.
- Gas should be turned off at the gas tank, but power should remain on to operate lights and other equipment unless directed otherwise by emergency services.
- Employees will be directed on what to do next while preparing fire equipment.
- Combustible material from verandas (doormats, furniture and bags etc.) shall be removed.

5.1.2 Wildfire threatening and advised to leave the site

In the event where appropriate authority determines that to remain at the Lodge in case of fire is unsafe, the following shall be done:

- The Lodge Manager or the delegate will sound an alarm, which will prompt all employees to

move to the emergency assembly area.

- A head count of present employees shall be conducted by the supervisors.
- Everyone must dress appropriately.
- No one shall be allowed to move around unless it is declared safe to do so.

5.2 In-house Fire

All common areas shall be fitted with a fire alarm and an automatic or manual type of electrical fire alarm with a fire indicator board to indicate the location of the alarm. In the event of an alarm sounding, the following steps should be carried out:

- The Lodge Manager or the delegate shall be notified immediately.
- All areas should be checked to determine where the danger is.
- In case an event occurs during the night, all sleeping areas should to be evacuated in a quiet and orderly manner to the emergency assembly area.
- If there is no evidence of fire or smoke, the supervisor(s) will be responsible for ascertaining whether or not it is a false alarm.
- Gas should be switched off at the gas tank.

5.3 Lost or Missing Camp Employee(s)/Visitor(s)

In a situation where an employee and/or a visitor is missing:

- The name of a missing employee/visitor should be called loudly.
- Full description of the missing person should be obtained from the supervisor/respective driver guide.
- A search party comprising of both the Lodge employees and rangers from the NCAA should be organized if it is safe to do so.
- Management of any neighboring facility should be notified of the missing person and respective detailed description provided. Phone number of the Lodge Manager and other senior officers should be provided to enable appropriate communication.
- In the case where Fire and Rescue and/or Police Force have been involved into the search, the Lodge Manager should notify the respective NCAA officers.
- Upon locating the missing person, the Fire and Recues /Police Force, neighbors and the NCAA should be informed and also determine whether medical attention is required.

5.4 Injury

In case of any injury following emergency incident, the following actions shall be taken.

- If safe to do so remove an injured person from further danger and make him/her comfortable
- Provide first aid as appropriately as required.
- Contact the nearby medical provider as immediately as possible.
- At least one or two Lodge employees trained to provide first aid service should stay with the casualty all the time until a professional medical provider arrives.
- The Lodge Manager should arrange transport to move the casualty to the medical provider if required.

5.5 Gas Leak

In case of detection in gas leak, the following must be done:

- The gas provider should be notified immediately.
- Turn off the gas cylinder.
- If the leak is minor with slight smell of gas and the gas can be shut off, no evacuation of employees shall be required.
- If the leak is major with a very strong smell or visual plume of gas either indoor or outdoor then evacuation must be considered.
- Remember the gas is heavier than air thus vehicles should not be used for evacuation.

6 POST EMERGENCY DEBRIEFING

In the event of emergency, a post response debriefing should be conducted as soon as practicable after the situation has been controlled. The level of the debriefing will depend on the seriousness of the incident.

6.1 Minor incidents

Where an emergency incident has been handled internally and no injuries or apparent exposure to trauma, a discussion between those involved in the episode will take place and notes of this response will be made. Any problems with the response and lesson that can be learned will be noted and adopted.

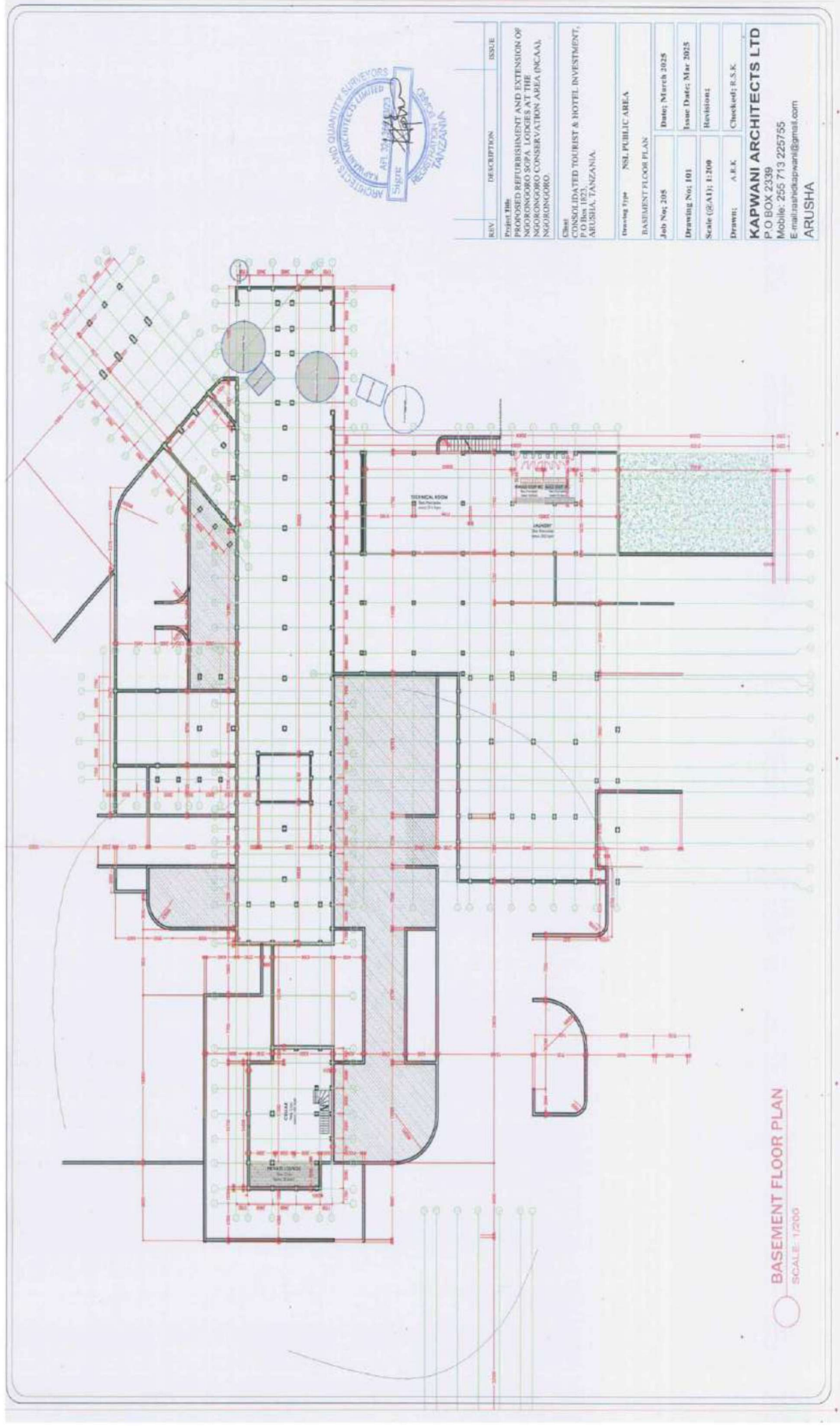
6.2 Major incidents

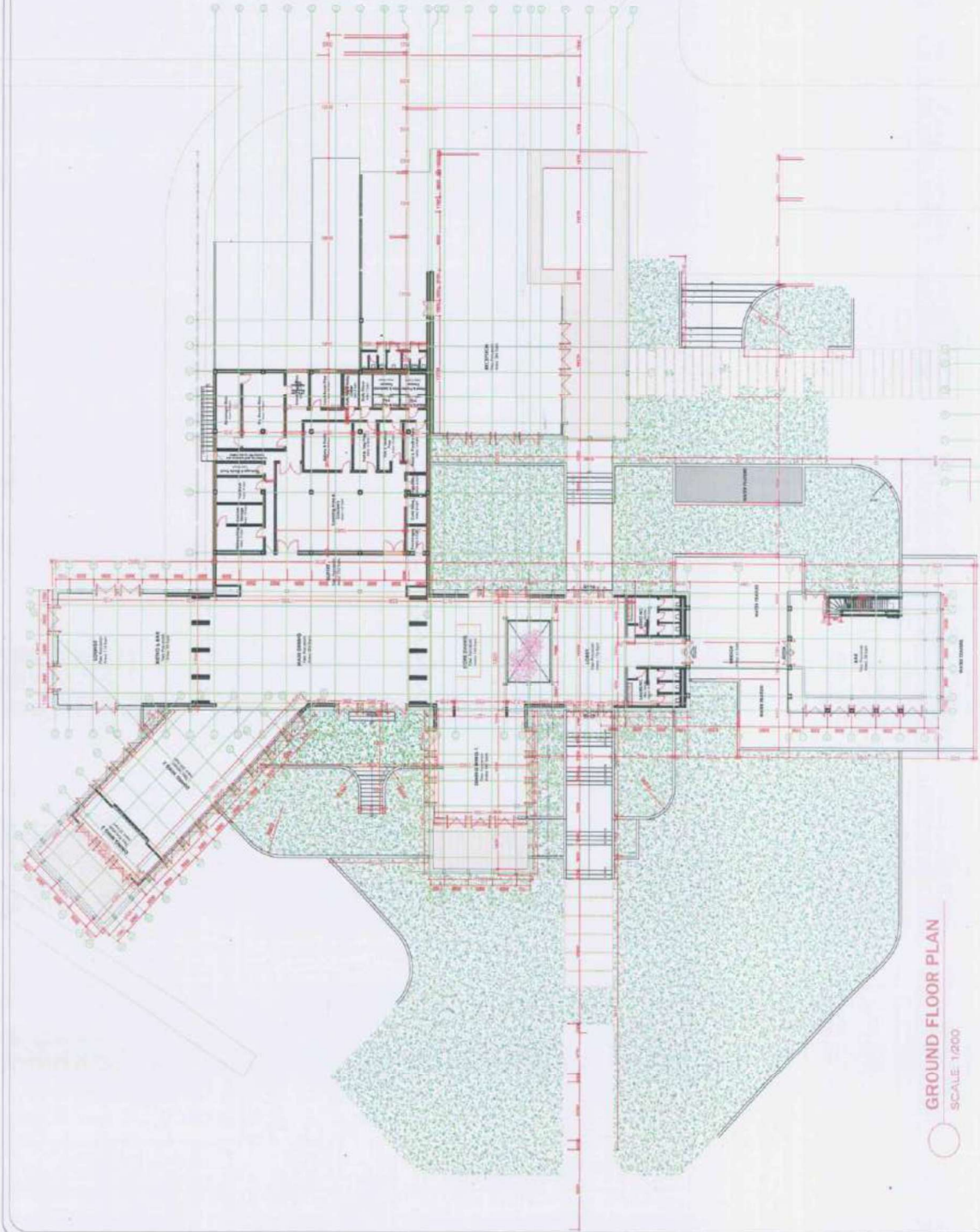
Where injury or trauma has occurred or external party has been involved, a full debriefing with all parties involved and formal recommendations as to any adjustments to the response will be sought from all interested parties. A report shall be written and kept at the Lodge for future reference.

Appendix 14: Site layout plan showing existing structures and proposed construction



Appendix 15: Architectural drawings for proposed renovation of existing facilities.

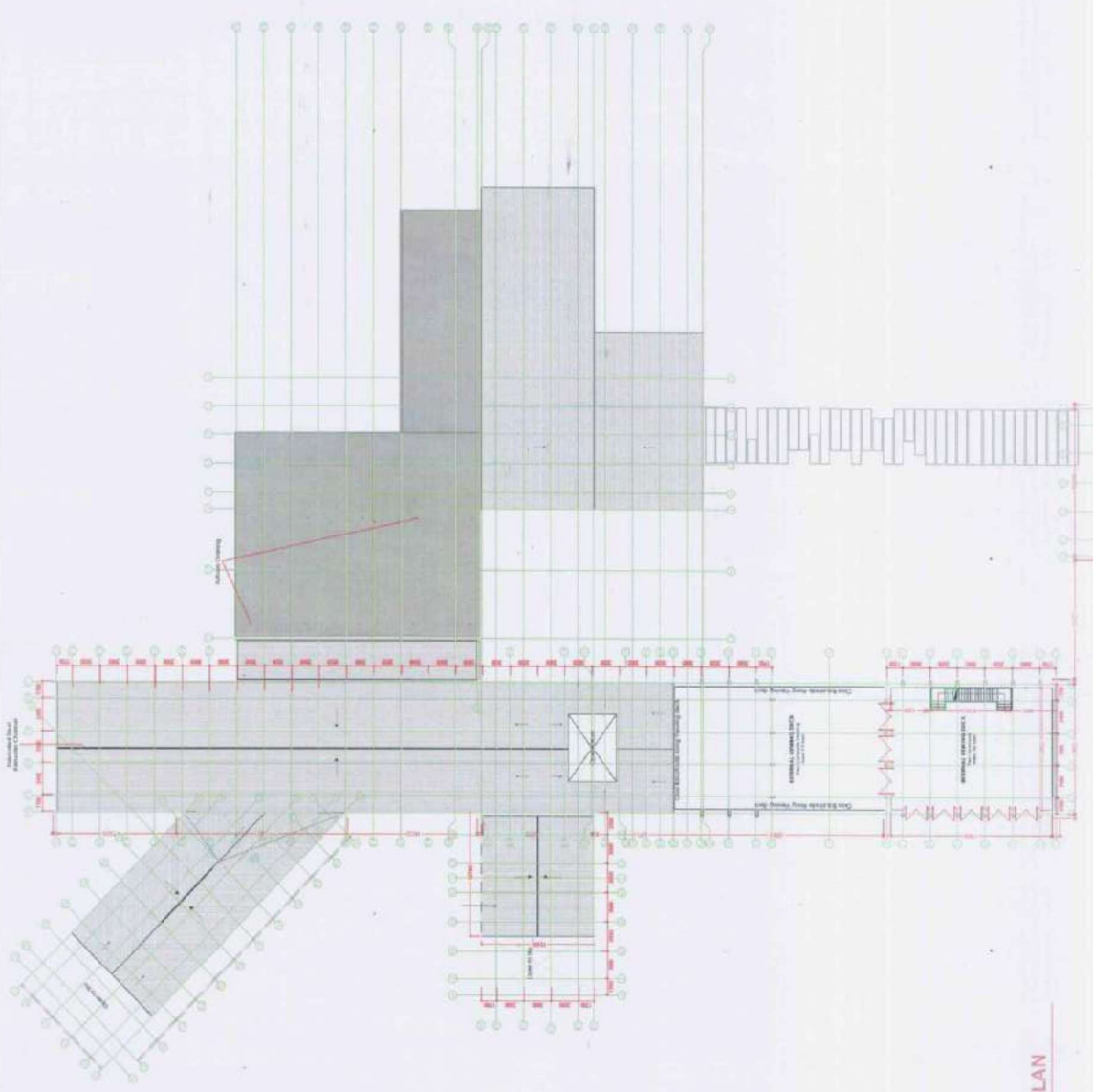




○ GROUND FLOOR PLAN
SCALE: 1:200



REV.	DESCRIPTION	ISSUE
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<p>Drawing Type: SITE PUBLIC AREA GROUND FLOOR PLAN</p>		
Job No: 205		Date: March 2025
Drawing No: 102		Issue Date: Mar 2025
Scale (6.A1): 1:200		Revisions:
Drawn: A.E.K.		Checked: K.S.K.
<p>KAPWANI ARCHITECTS LTD P.O. BOX 2339 Mobile: 255 713 225755 E-mail: kapwani@gmail.com ARUSHA</p>		



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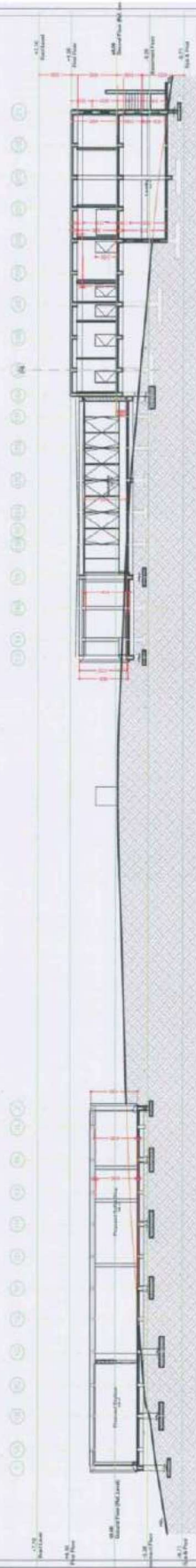
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**PROPOSED REFINISHMENT AND EXTENSION OF
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 NGORONGORO CONSERVATION AREA (NCAA),
 NGORONGORO.**

Client:
**THE CONSOLIDATED TOURIST & HOTEL INVESTMENT,
 P.O. Box 123,
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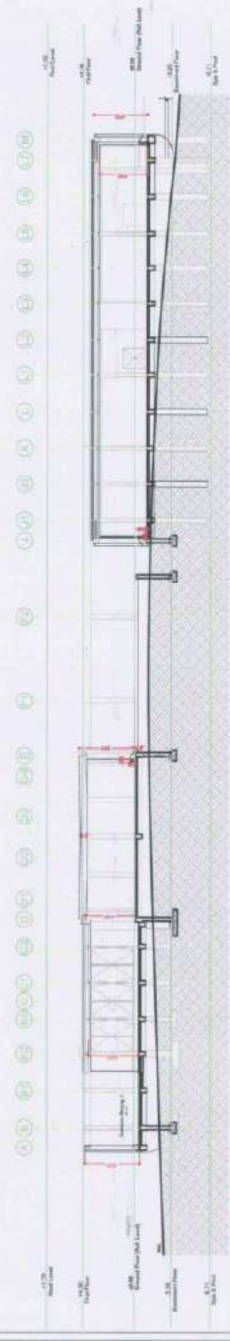
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Job No: 205	Date: March 2015
Drawing No: 103	Issue Date: Mar 2015
Scale (@A1): 1:200	Revisions:
Drawn: A.R.K	Checked: R.S.K

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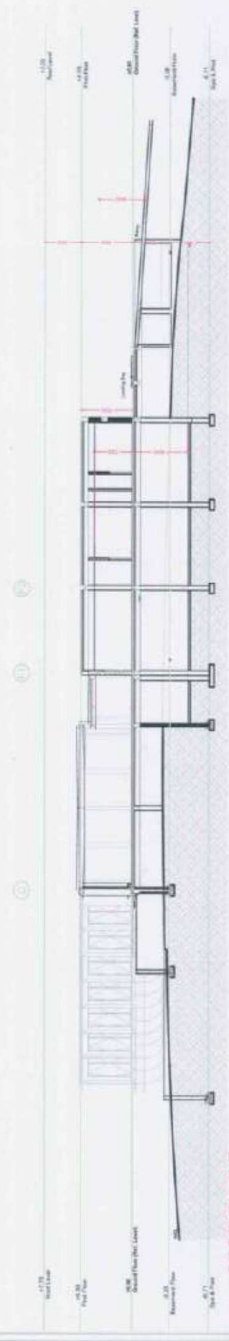
FIRST FLOOR PLAN
 SCALE: 1:200



SECTION I-I
SCALE: 1/200



SECTION D-D
SCALE: 1/200

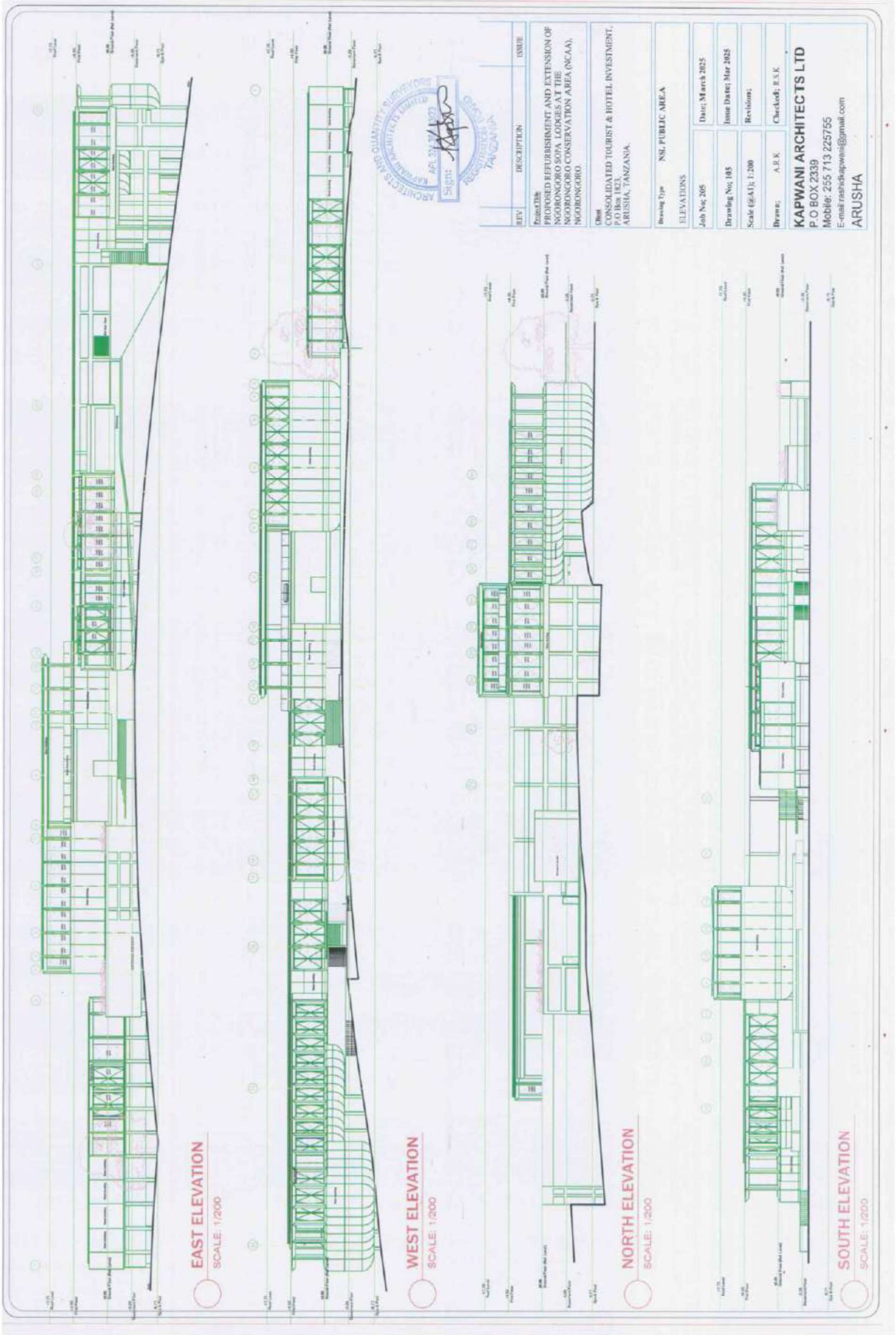


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REV	DESCRIPTION	ISSUE
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Drawing Title: NSE PUBLIC AREA		
SECTIONS		
Job No: 205		Date: March 2025
Drawing No: 104		Issue Date: Mar 2025
Scale: (S.A.1): 1:175		Revises:
Drawn: A.F.K.		Checked: R.S.K.

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EAST ELEVATION
SCALE: 1/200

WEST ELEVATION
SCALE: 1/200

NORTH ELEVATION
SCALE: 1/200

SOUTH ELEVATION
SCALE: 1/200



REV	DESCRIPTION	ISSUE
01	PROPOSED REFRUBISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NCA), NGORONGORO.	

Client: CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O BOX 1823, ARUSHA, TANZANIA.

Drawing Type: NSL PUBLIC AREA

ELEVATIONS

Job No: 205	Date: March 2025
Drawing No: 105	Issue Date: Mar 2025
Scale (A1): 1:200	Revisions:
Drawn: A.R.K	Checked: E.S.K

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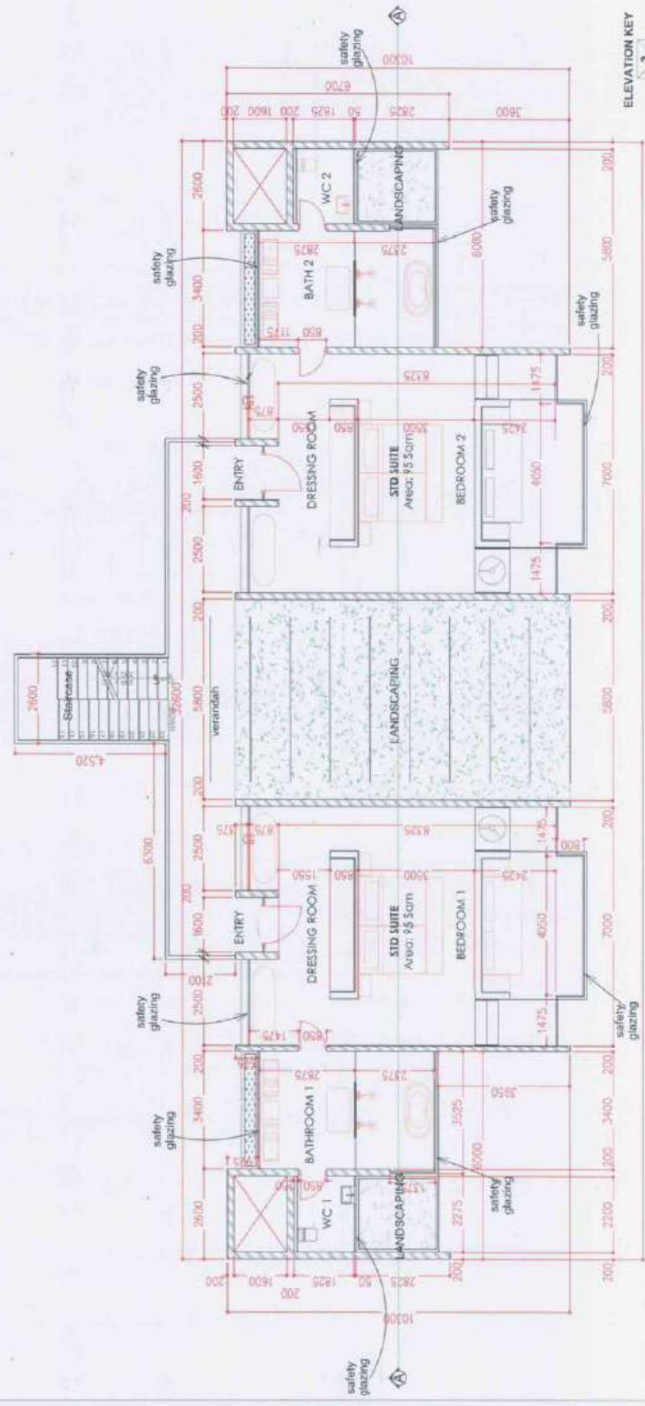
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Client
CONSOLIDATED TOURIST & HOTEL INVESTMENT, LIMITED
 ARUSHA, TANZANIA.

Drawing Title
NII - FAMILY SUITE (BLOCK 3)

GROUND FLOOR PLAN	
Job No:	205
Date:	March 2025
Drawing No:	106
Issue Date:	Mar 2025
Scale:	(@A3): 1:100
Revision:	
Drawn:	A.R.K
Checked:	R.S.K

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ELEVATION KEY

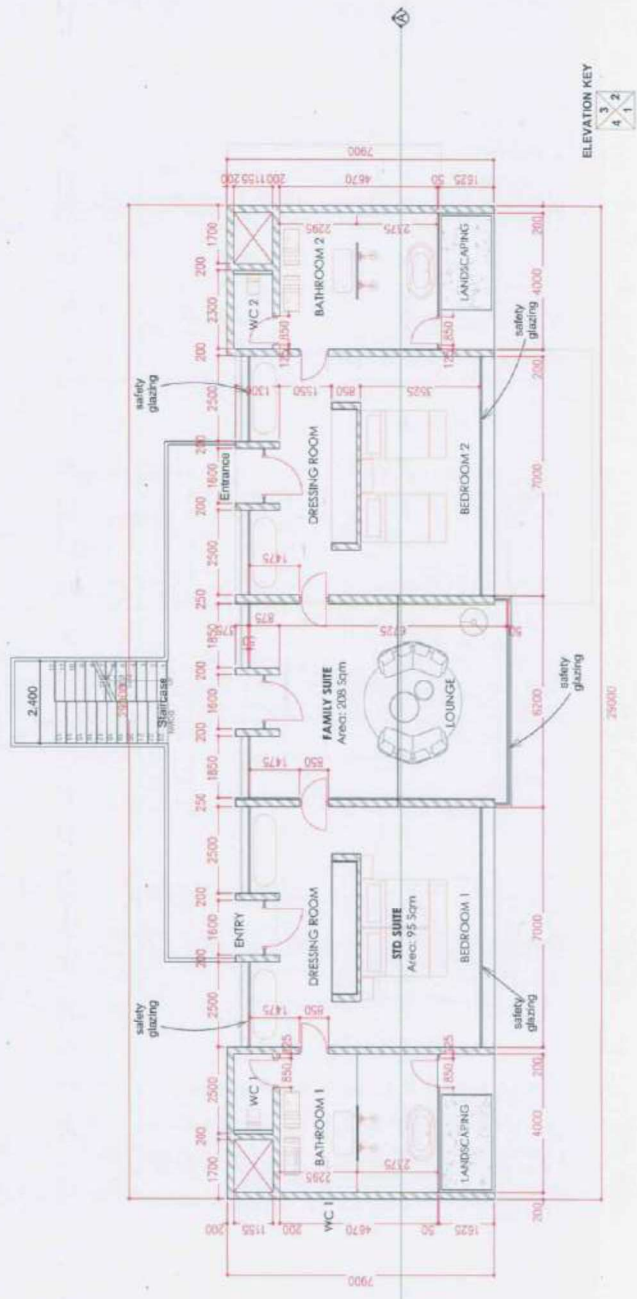
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GROUND FLOOR PLAN
 SCALE: 1:100

1 UNIT

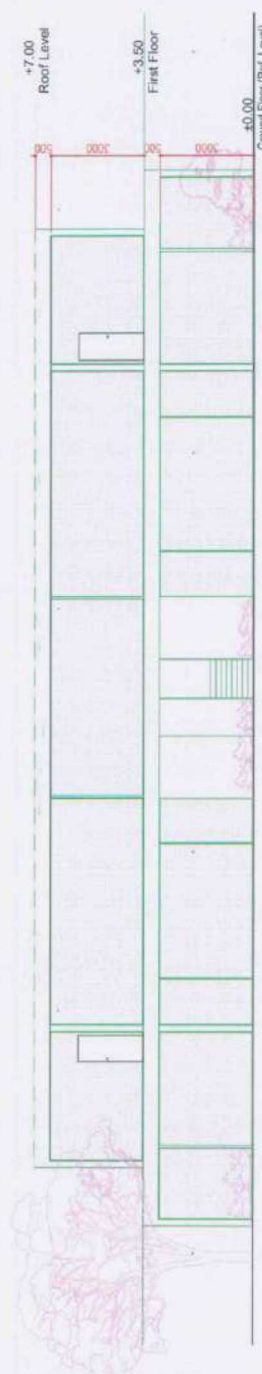


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Client: CONSOLIDATED TOURIST & HOTEL INVESTMENT, LTD NGORONGORO, ARUSHA, TANZANIA		
Drawing Title: NSI FAMILY SUITE (BLOCK 3) FIRST FLOOR PLAN		
Job No: 205	Date: March 2025	
Drawing No: 107	Issue Date: Mar-2025	
Scale: (B/A2): 1:100	Revision:	
Drawn: A.S.K.	Checked: K.S.K.	
KAPWANI ARCHITECTS LTD P.O BOX 2339 Mobile: 255 713 225755 E-mail: kashidkapwani@gmail.com ARUSHA		

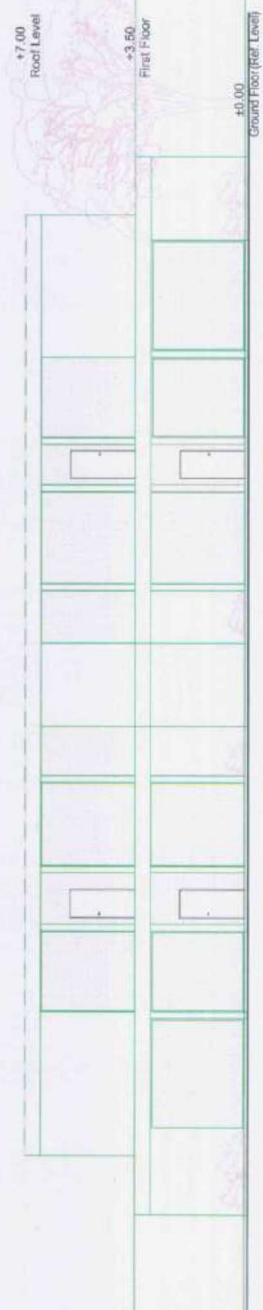


FIRST FLOOR PLAN
SCALE: 1:100

1 UNIT



ELEVATION 1
SCALE: 1/100



ELEVATION 3
SCALE: 1/100



REV	DESCRIPTION	ISSUE

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PROPOSED REFURBISHMENT AND EXTENSION
OF THE CONSOLIDATED TOURIST & HOTEL
NSI FAMILY SUITE (BLOCK 3)
NGURUNGURU CONSERVATION AREA (NCA)
NGURUNGURU.

Client:
CONSOLIDATED TOURIST & HOTEL
P.O. Box 1823,
ARUSHA, TANZANIA.

Drawing Type: NSI FAMILY SUITE (BLOCK 3)

ELEVATIONS

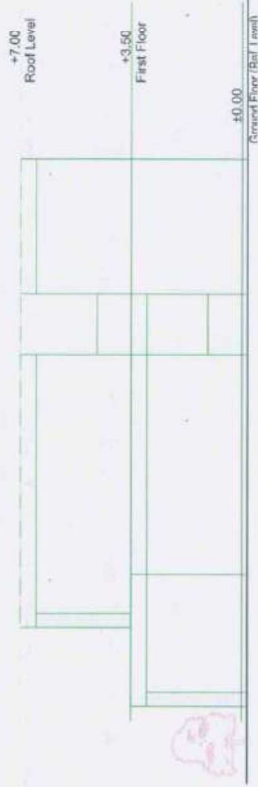
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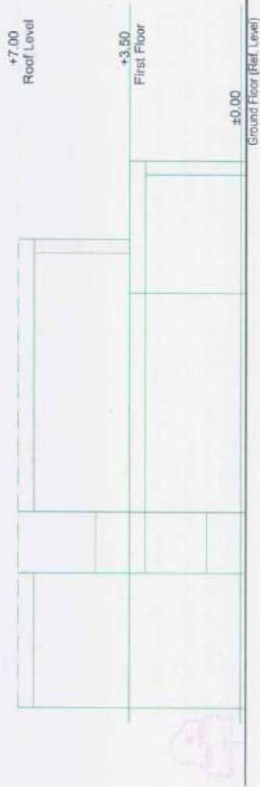
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Revisits:

Drawn: A.R.K.
Checked: R.S.K.

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ELEVATION 2
SCALE: 1/100



ELEVATION 4
SCALE: 1/100



REV	DESCRIPTION	ISSUE

PROJECT
REFURBISHMENT AND EXTENSION
OF NGORONGORO SCAPA LODGES AT THE
NGORONGORO CONSERVATION AREA (NCA),
NGORONGORO.

CLIENT
CONSOLIDATED TOURIST & HOTEL
CORPORATION LTD,
P.O. Box 1822,
ARUSHA, TANZANIA.

Drawing Type NSI FAMILY SUITE (BLOCK 3)

ELEVATIONS

Job No: 205

Date: March 2025

Drawing No: 110

Issue Date: Mar 2025

Scale: (G.A.3): 1:100

Revisions:

Drawn: A.E.K

Checked: R.S.K

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ARUSHA



1 UNIT

TYPICAL GROUND & FIRST FLOOR PLAN
SCALE: 1/75



REV.	DESCRIPTION	ISSUE
Project Info PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NCA) NGORONGORO.		
Client CONSOLIDATED TOURIST & HOTEL INVESTMENT, ARUSHA, TANZANIA.		
Drawing Type NSL STD SUITE (BLOCK 4) TYPICAL GROUND & FIRST FLOOR PLAN		
Job No: 205		Date: March 2025
Drawing No: 111		Issue Date: Mar 2025
Scale (@A1): 1:75		Revised:
Drawn: A.J.K		Checked: R.S.C.
KAPWANI ARCHITECTS LTD P.O BOX 2339 Mobile: 255 713 225755 E-mail: rasidkapwani@gmail.com ARUSHA		



REV	DESCRIPTION	ISSUE

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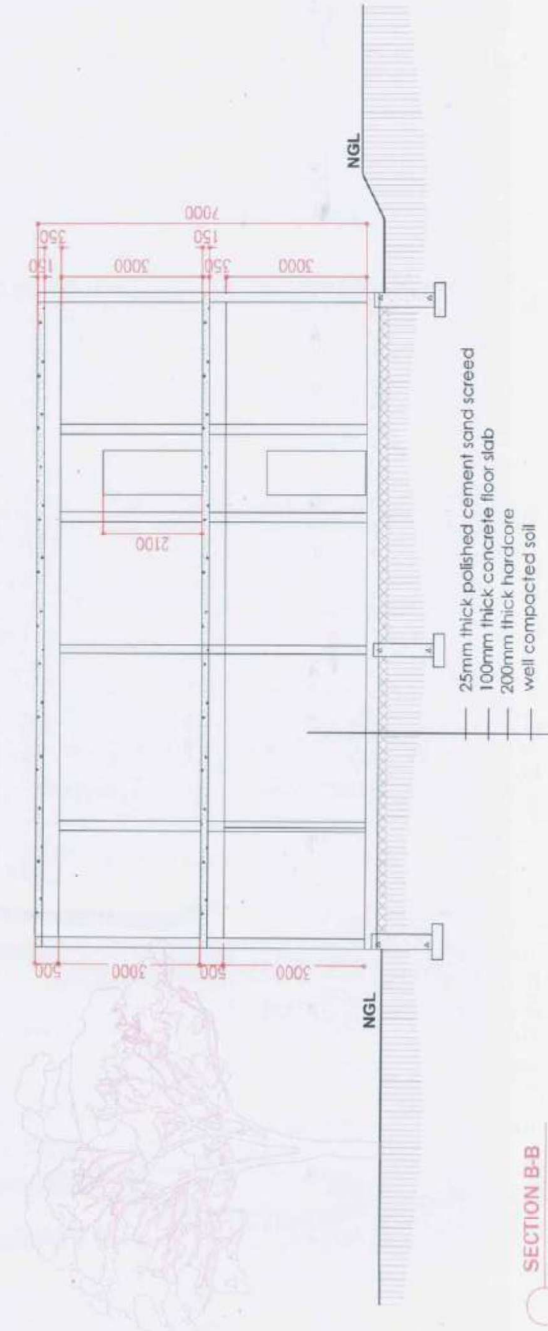
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CONSOLIDATED TOURIST & HOTEL INVESTMENT, PORT KAITUMA, ARUSHA, TANZANIA.

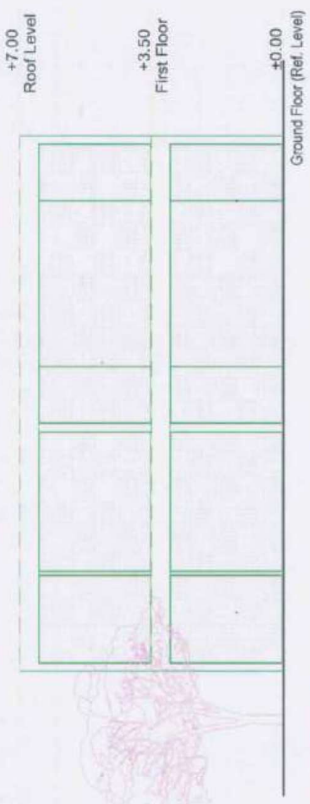
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SECTION

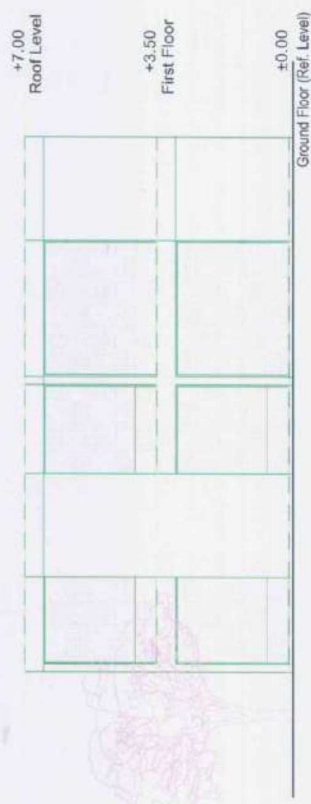
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Scale (@A3): 1:75	Revision:
Drawn: A.E.K	Checked: R.S.K

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ELEVATION 1
SCALE: 1/75



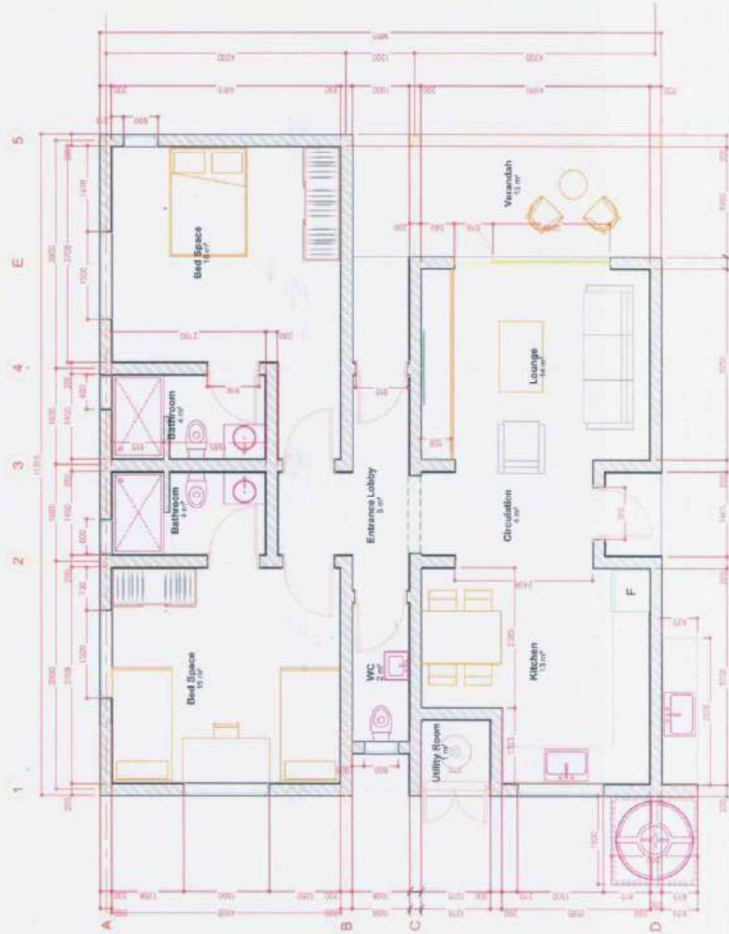
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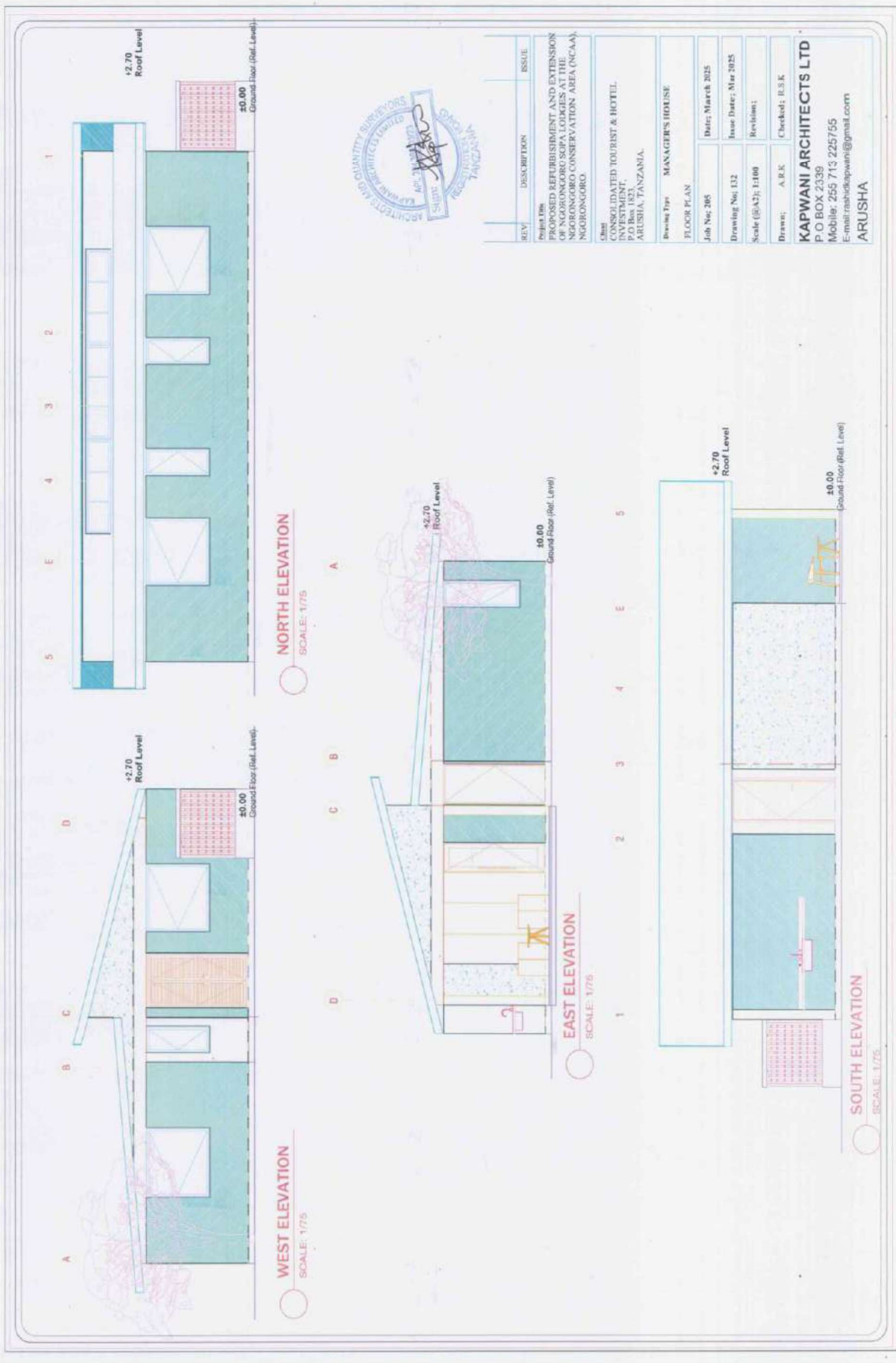
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02	CONSOLIDATED TOURIST & HOTEL INVESTMENT, NGORONGORO CONSERVATION AREA, ARUSHI, TANZANIA	
Drawing Type: NSI STD SUITE (BLOCK 4)		
ELEVATIONS		
Job No:	205	
Date:	March 2025	
Drawing No:	113	
Issue Date:	Mar 2025	
Scale (g.A.):	1:75	
Revision:		
Drawn:	A.R.K.	
Checked:	R.S.K.	
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ARUSHA		



REV.	DESCRIPTION	ISSUE
1	Initial Title	
<p>PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NCAA), NGORONGORO.</p>		
<p>Client: CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O. Box 1823, ARUSHA, TANZANIA.</p>		
<p>Drawing Type: MANAGER'S HOUSE</p>		
<p>FLOOR PLAN</p>		
Job No:	205	Date: March, 2025
Drawing No:	131	Issue Date: Mar 2025
Scale (@A1):	1:100	Revision:
Drawn:	A. E. K.	Checked: R. S. K.
<p>KAPWANI ARCHITECTS LTD P.O. BOX 2339 Mobile: 255 713 225755 E-mail: rashidkapwani@gmail.com ARUSHA</p>		



FLOOR PLAN
SCALE: 1:50



REV	DESCRIPTION	ISSUE

Project Title
PROPOSED REFURBISHMENT AND EXTENSION OF THE MANAGER'S HOUSE IN NGORONGORO CONSERVATION AREA (NCA) NGORONGORO.

Client
UNIVERSITY OF TOURISM & HOTEL MANAGEMENT, P.O. Box 1823, ARUSHA, TANZANIA.

Drawing Type
MANAGER'S HOUSE

FLOOR PLAN

Job No: 205
 Date: March 2025

Drawing No: 132
 Issue Date: Mar 2025

Scale (B/A2): 1:100
 Revisions:

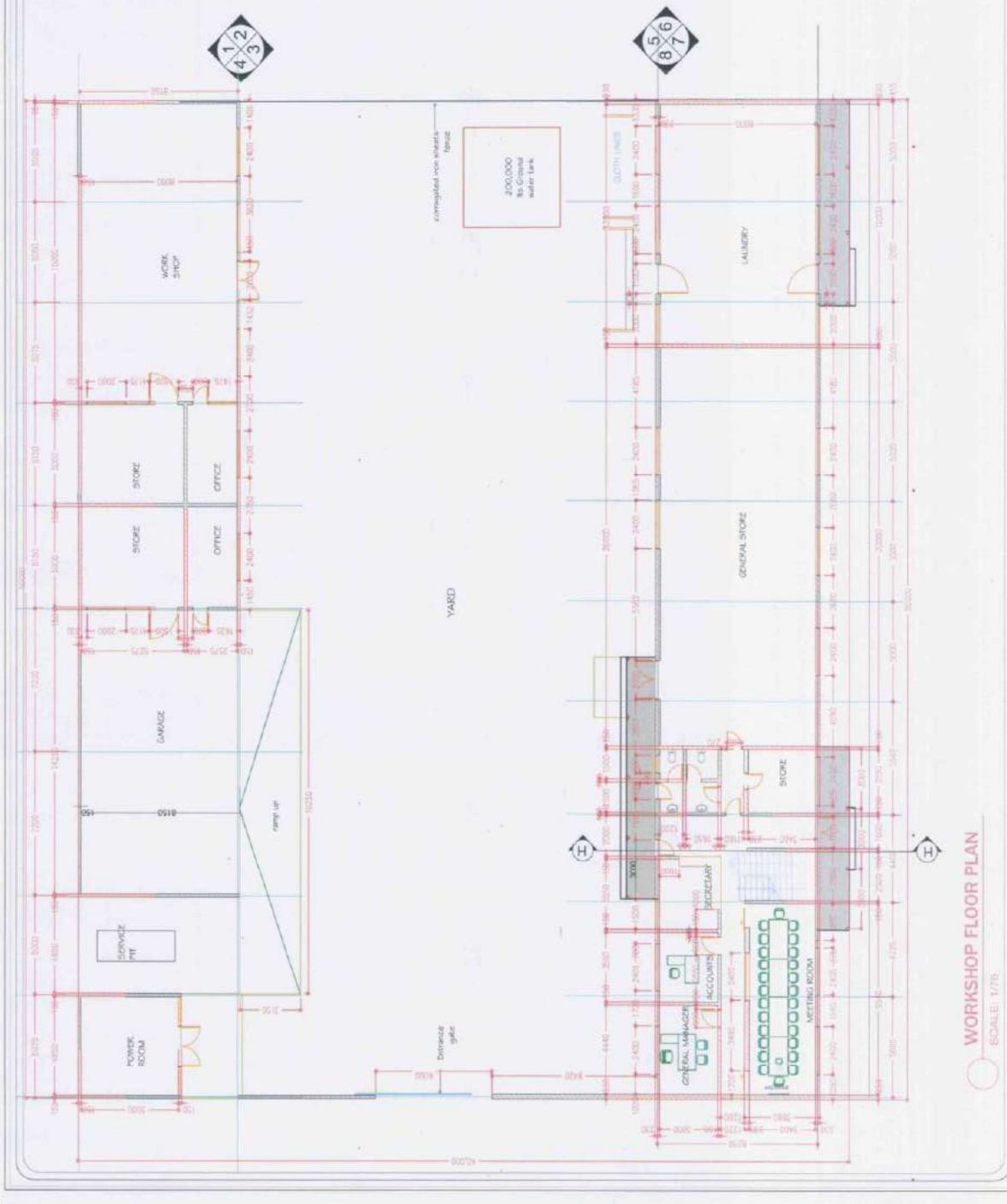
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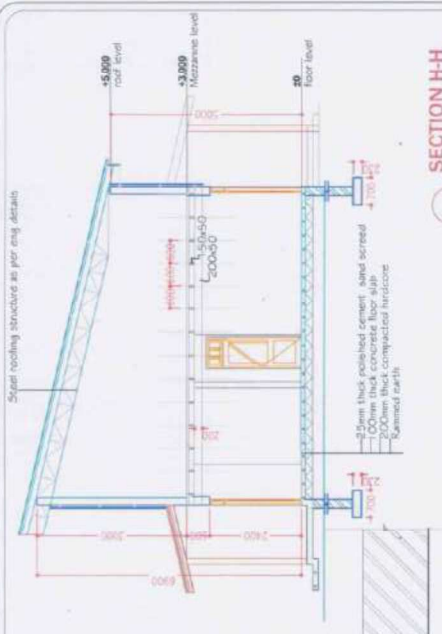
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 P.O. BOX 2339
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 E-mail: kapwaniarchitects@gmail.com
ARUSHA



REV	DESCRIPTION	ESSE
Project Title PROPOSED REFRISHMENT AND EXTENSION OF NGORONGORO CONSERVATION AREA (NCAA) NGORONGORO.		
Client CONSOLIDATED TOURIST & HOTEL NGORONGORO TOURIST & HOTEL P.O. Box 1823, ARUSHA, TANZANIA.		
Drawing Type: WORKSHOP		
FLOOR PLAN		
Job No. 205		
Date: March 2025		
Drawing No. 133		
Issue Date: Mar 2025		
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Revision:		
Drawn: A.R.K		
Checked: R.S.K		

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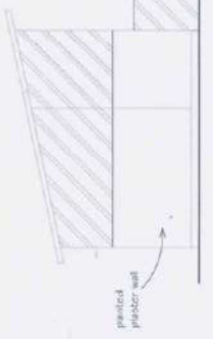




SECTION H-H
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ELEVATION 1
SCALE: 1/100



ELEVATION 2
SCALE: 1/100



ELEVATION 3
SCALE: 1/100

ELEVATION 4
SCALE: 1/100

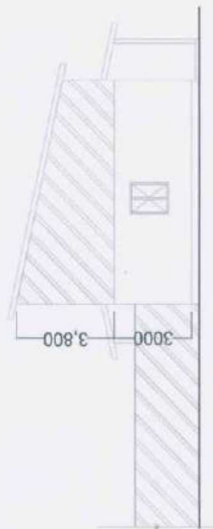
REV	DESCRIPTION	ISSUE

Client: CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O BOX 182, ARUSHA, TANZANIA

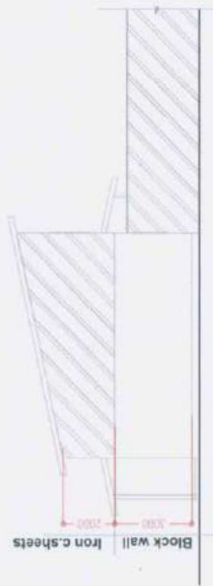
Drawn	Type	WORKSHOP

SECTION: ELEVATIONS
Job No: 205
Date: March 2015
Drawing No: 134
Issue Date: Mar 2015
Scale (@A3): 1:75, 1:100
Drawn: A.B.K.
Checked: R.S.K.

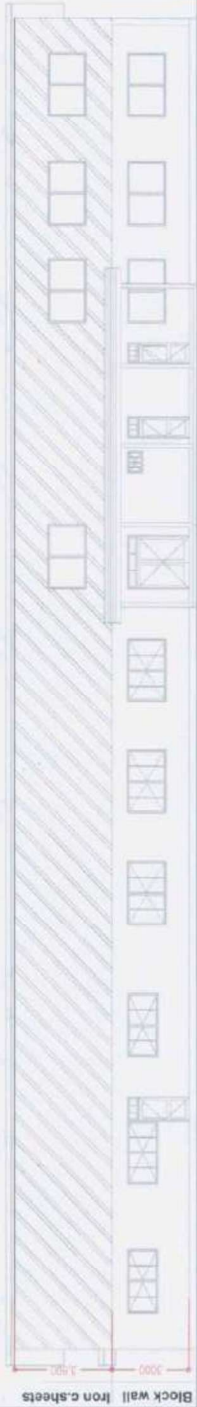
KAPWANI ARCHITECTS LTD
P.O BOX 2339
Mobile: 255 713 225755
E-mail: rashidkapwani@gmail.com
ARUSHA



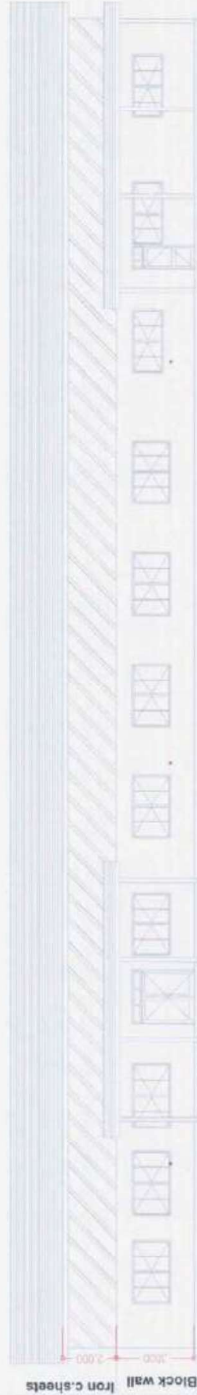
ELEVATION 8
SCALE: 1/100



ELEVATION 6
SCALE: 1/100



ELEVATION 5
SCALE: 1/100



ELEVATION 7
SCALE: 1/100



REV	DESCRIPTION	ISSUE
	PROPOSED REFURBISHMENT AND EXTENSION OF EXISTING HOTEL BUILDING IN NGORONGORO CONSERVATION AREA (NCA), NGORONGORO.	

Client
CONSOLIDATED TOURIST & HOTEL
NGORONGORO CONSERVATION AREA
P.O. Box 1823
ARUSHA, TANZANIA.

Drawing Type WORKSHOP

ELEVATIONS

Job No: 205

Date: March, 2025

Drawing No: E35

Issue Date: Mar 2025

Scale: (E3): 1/100

Revisions:

Drawn: A.E.K

Checked: R.S.K

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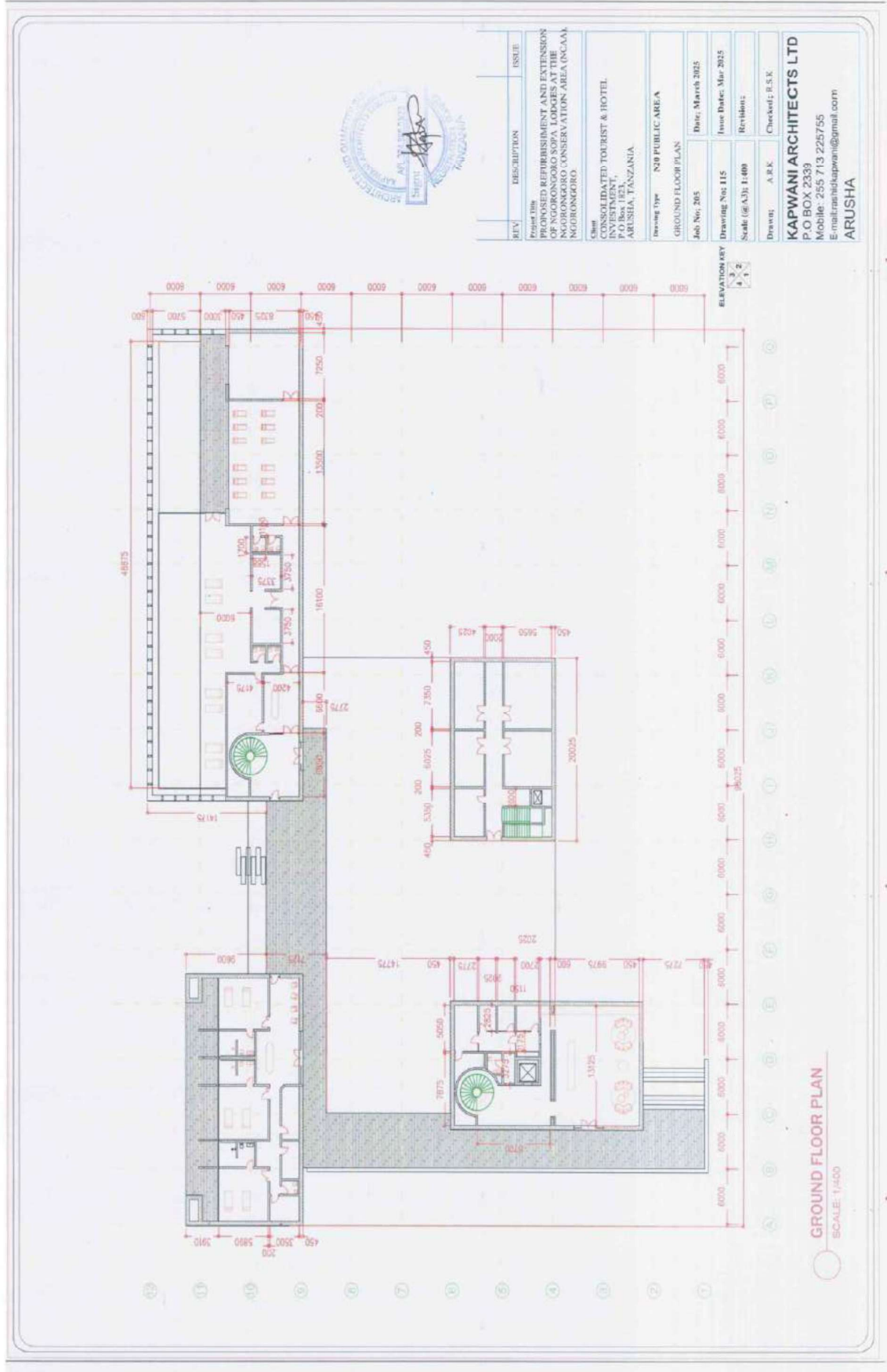
P.O BOX 2339

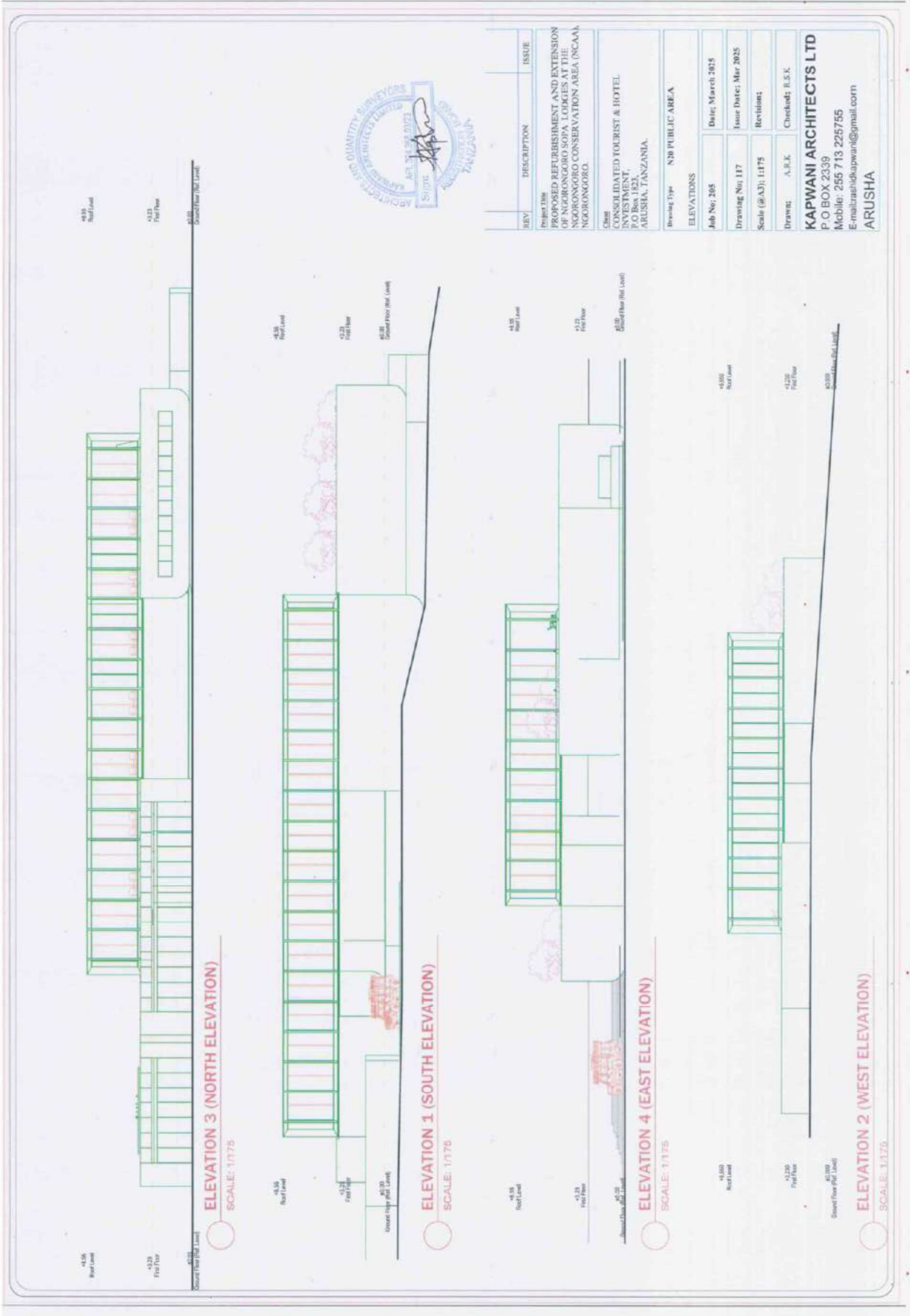
Mobile: 255 713 225755

E-mail: rashidkapwani@gmail.com

ARUSHA

Appendix 16: Architectural drawings for proposed expansion (new presidential suites)





ELEVATION 3 (NORTH ELEVATION)
SCALE: 1/175

ELEVATION 1 (SOUTH ELEVATION)
SCALE: 1/175

ELEVATION 4 (EAST ELEVATION)
SCALE: 1/175

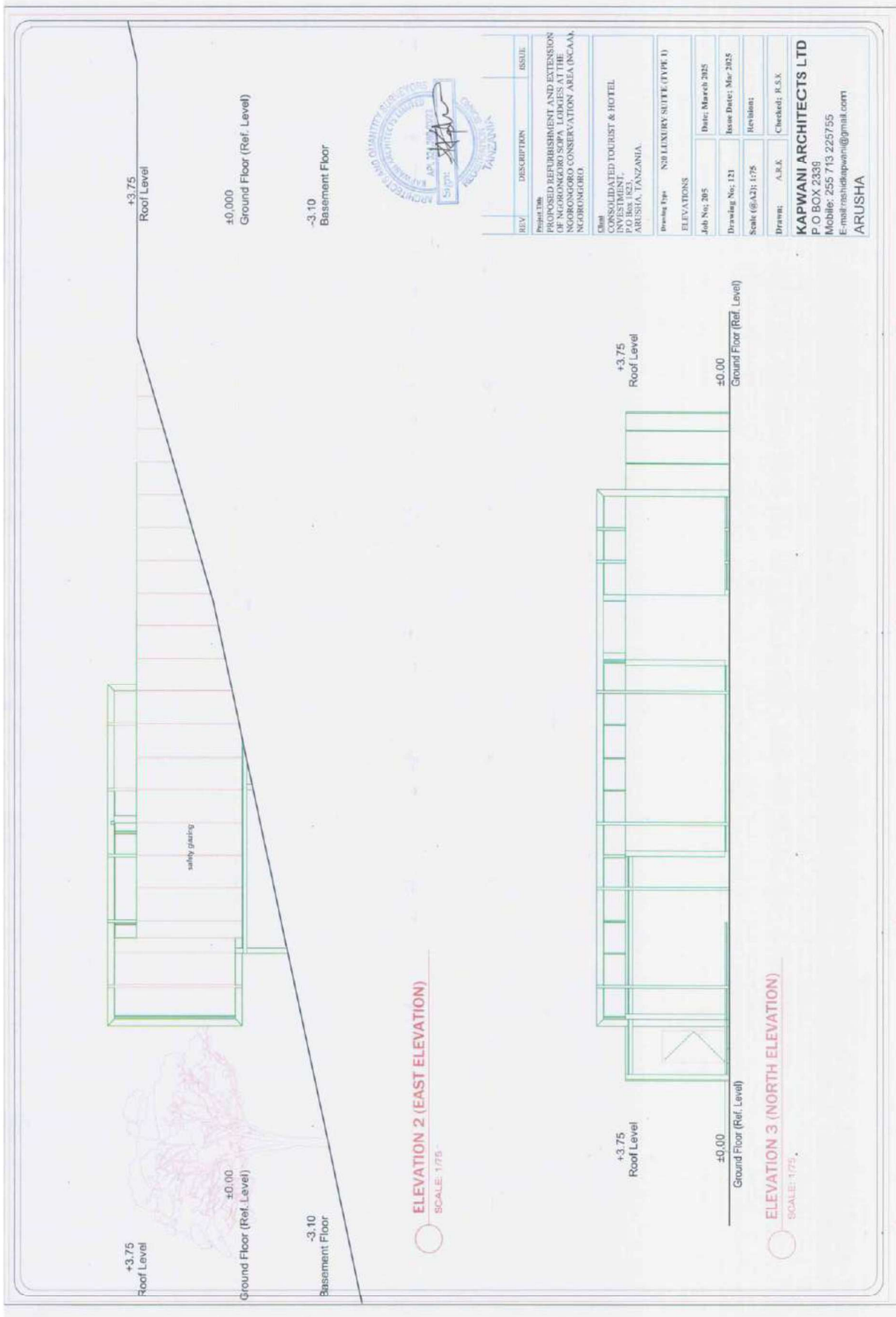
ELEVATION 2 (WEST ELEVATION)
SCALE: 1/175



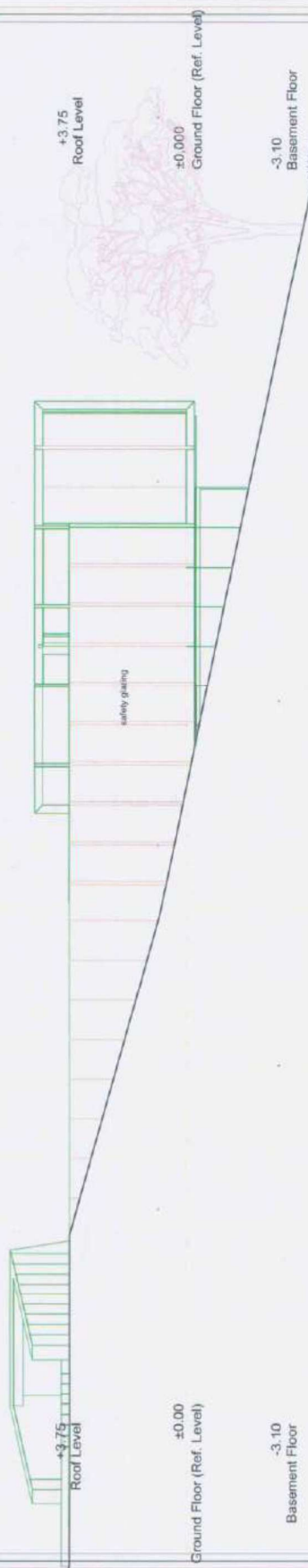
REV	DESCRIPTION	ISSUE
1	PROPOSED REFURISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NCA), NGORONGORO.	
2	CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O BOX 1923, ARUSHA, TANZANIA.	

Project Title	CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O BOX 1923, ARUSHA, TANZANIA.
Client	CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O BOX 1923, ARUSHA, TANZANIA.
Drawing Type	N:30 PUBLIC AREA
ELEVATIONS	
Job No: 205	Date: March 2025
Drawing No: 117	Issue Date: Mar 2025
Scale (@A3): 1:175	Revisions:
Drawn: A.J.K.	Checked: B.S.K.

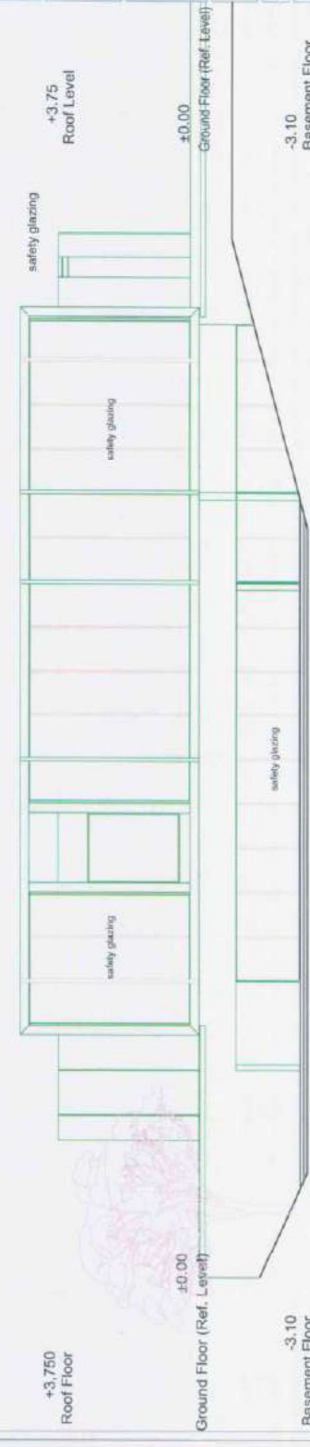
KAPWANI ARCHITECTS LTD	
P O BOX 2339	
Mobile: 255 713 225755	
E-mail:trashikapwani@gmail.com	
ARUSHA	



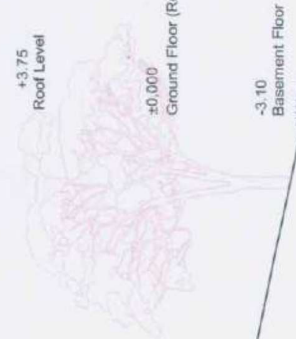
REV	DESCRIPTION	ISSUE
Project 1006	PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NCA), NGORONGORO	
Client	CONSOLIDATED TOURIST & HOTEL INVESTMENT, NGORONGORO CONSERVATION AREA, ARUSHA, TANZANIA.	
Drawing Type	NSI LUXURY SUITE (TYPE 1)	
ELEVATIONS		
Job No:	205	Date: March 2025
Drawing No:	121	Issue Date: Mar 2025
Scale (B-A2):	1:75	Revision:
Drawn:	A.E.K.	Checked: R.S.K.
KAPWANI ARCHITECTS LTD P O BOX 2338 Mobile: 255 713 225755 E-mail: kapwaniarchi@gmail.com ARUSHA		



ELEVATION 4 (WEST ELEVATION)
SCALE: 1/75



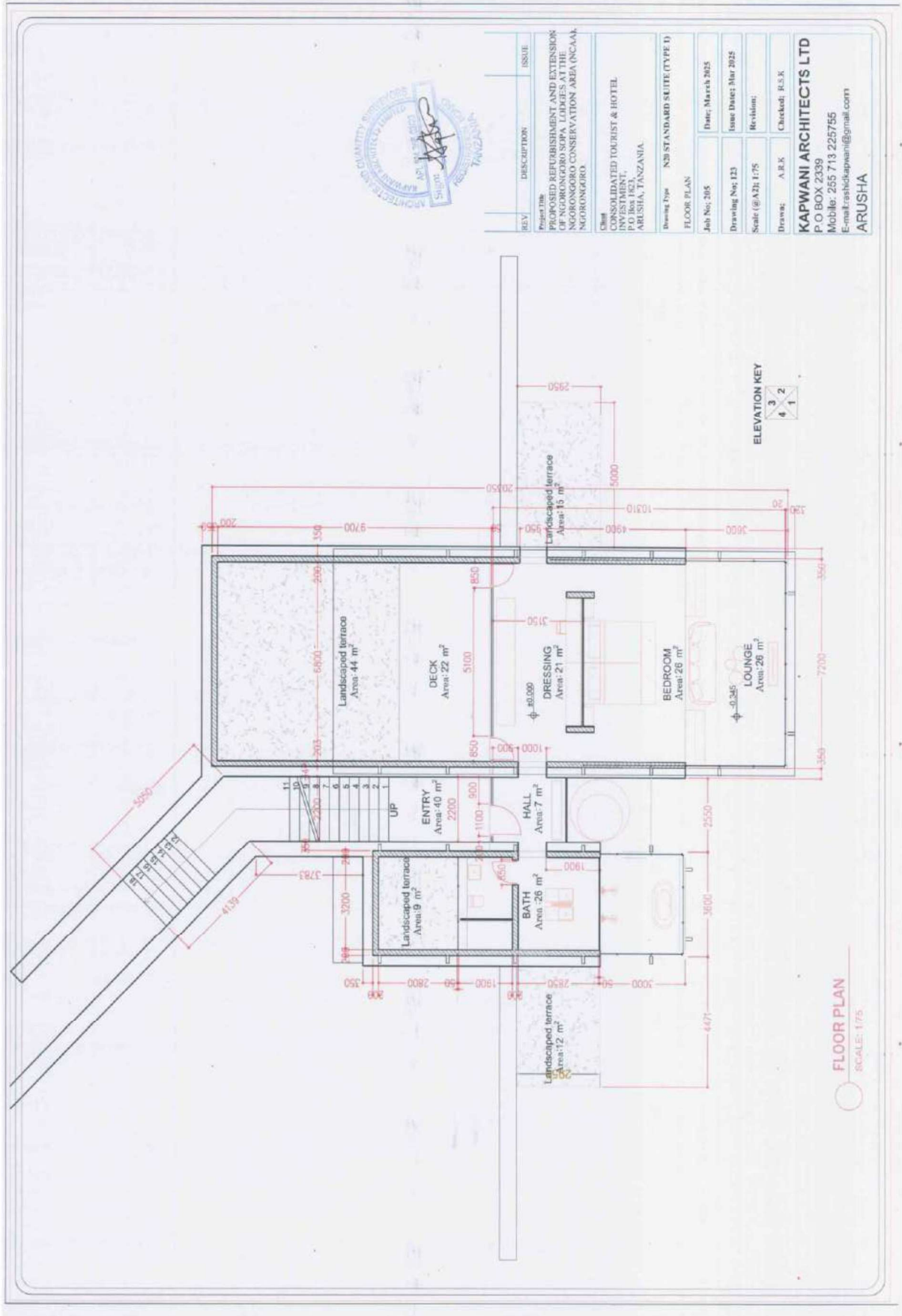
ELEVATION 1 (SOUTH ELEVATION)
SCALE: 1/75



ELEVATION 2 (NORTH ELEVATION)
SCALE: 1/75

REV.	DESCRIPTION	ISSUE
1	Issue Title PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NCA), NGORONGORO.	
2	Client CONSOLIDATED TOURIST & HOTEL INVESTMENT, NGORONGORO CONSERVATION AREA ARUSHA, TANZANIA.	
Drawing Type: NON LUXURY SUITE (TYPE 1)		
ELEVATIONS		
Job No: 205	Date: March 2025	
Drawing No: 122	Issue Date: Mar 2025	
Scale (E.A.): 1/75	Revisions:	
Drawn: A.E.K	Checked: R.S.K	

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REV	DESCRIPTION	ISSUE

Project Title: PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO CONSERVATION AREA (NCA) NGORONGORO

Client: CONSOLIDATED TOURIST & HOTEL
 P.O. Box 183,
 ARUSHA, TANZANIA

Drawing Type: 2B STANDARD SUITE (TYPE 1)

FLOOR PLAN

Job No: 205
 Date: March 2025

Drawing No: 123
 Issue Date: Mar 2025

Scale: @A3: 1/75
 Revision:

Drawn: A.R.K
 Checked: R.S.K

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 Mobiler: 255 713 225755
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 ARUSHA



FLOOR PLAN
 SCALE: 1/75



REV	DESCRIPTION	ISSUE

Project Title: PROPOSED REFURBISHMENT AND EXTENSION OF TOURIST & HOTEL IN NGORONGORO CONSERVATION AREA (NCA) NGORONGORO.

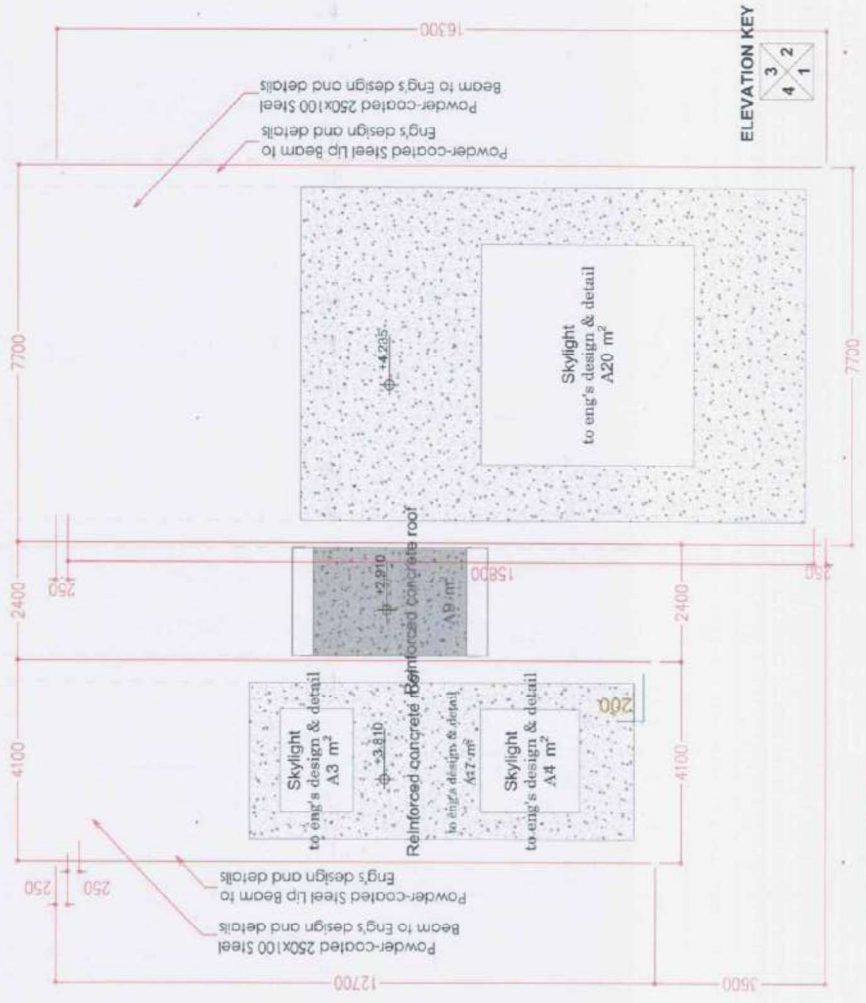
Client: CONSOLIDATED TOURIST & HOTEL
 Plot No. 1234,
 P.O. Box 1823,
 ARUSHA, TANZANIA.

Drawing Type: N28 STANDARD SUITE (TYPE 1)

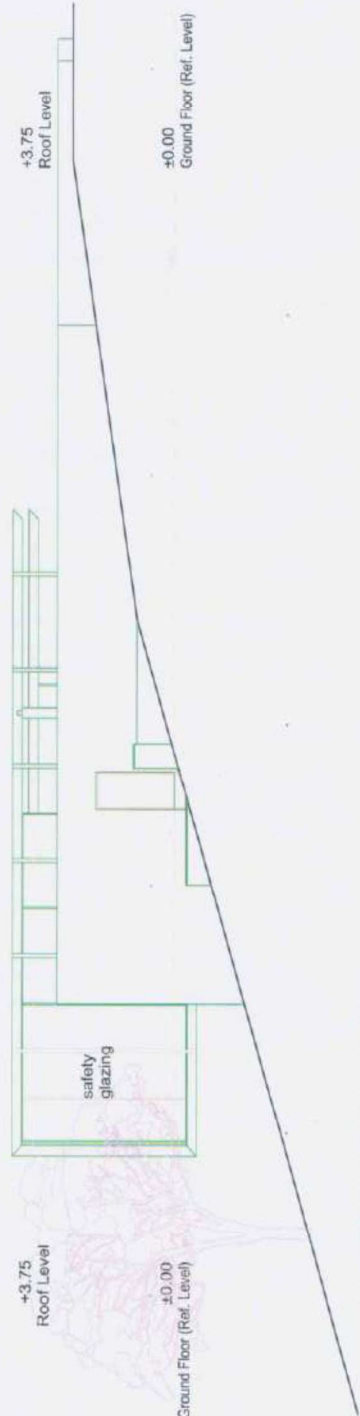
ROOF PLAN

Job No: 305 Date: March 2025
 Drawing No: 124 Issue Date: Mar 2025
 Scale (@A3): 1/75 Revisions:
 Drawn: A.R.K Checked: E.S.K.

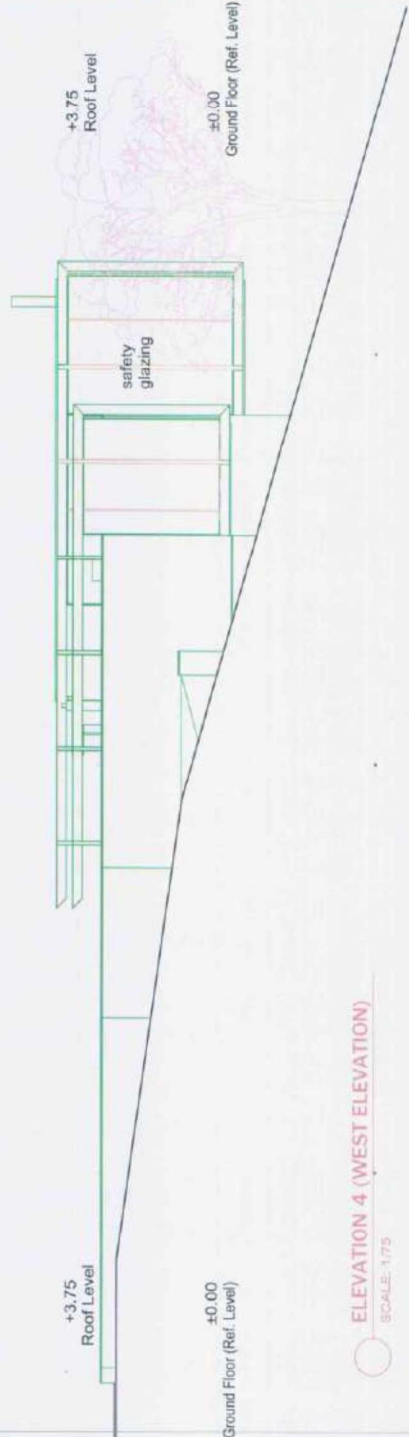
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 E-mail: rashikapwani@gmail.com
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ROOF PLAN
 SCALE: 1/75



ELEVATION 2 (EAST ELEVATION)
SCALE: 1/75



ELEVATION 4 (WEST ELEVATION)
SCALE: 1/75



REV	DESCRIPTION	ISSUE

PROJECT DATA
 PROJECT: REPERMITS AND EXTENSION OF NGORONGORO LODGES AT THE NGORONGORO CONSERVATION AREA (NCAA), NGORONGORO.

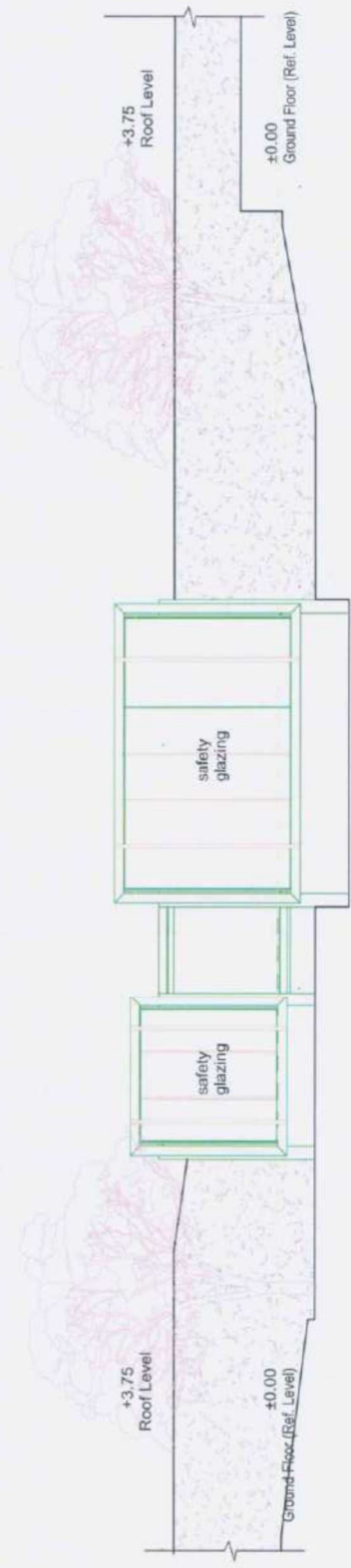
CLIENT
 UNRESOLVED TOURIST & HOTEL INVESTMENT,
 P.O. Box 1821,
 ARUSHA, TANZANIA.

Drawing Type: NONSTANDARD SUITE (TYPE 1)

ELEVATIONS

Job No:	205
Date:	March 2025
Drawing No:	125
Issue Date:	Mar 2025
Scale (B/A3):	1/75
Revisions:	
Drawn:	A.R.K
Checked:	R.S.K

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 E-mail: rashidkapwani@gmail.com
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ELEVATION 1 (SOUTH ELEVATION)
SCALE: 1/75



ELEVATION 3 (NORTH ELEVATION)
SCALE: 1/75



REV.	DESCRIPTION	ISSUE
01	PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NCA), NGORONGORO.	

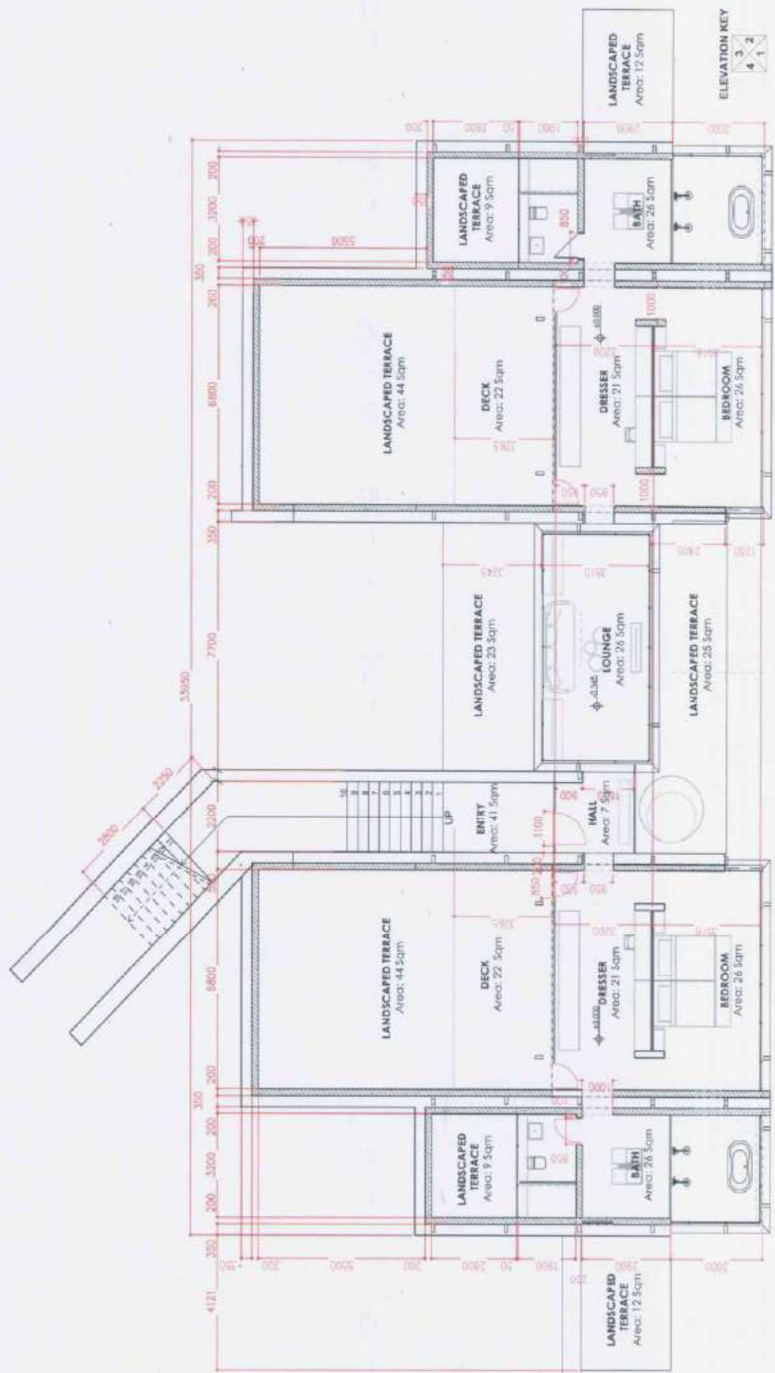
Client: CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O. Box 1963, ARUSHA, TANZANIA.

Drawing Type: N28 STANDARD SUITE (TYPE 1)	
ELEVATIONS	
Job No: 205	Date: March 2025
Drawing No: 126	Issue Date: Mar 2025
Scale (@A3): 1:75	Revisions:
Drawn: A.E.K.	Checked: B.S.K.

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E-mail: rashidkapwani@gmail.com
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BTV	DESCRIPTION	RSUB
Project No:	PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOPA LODGES AT THE NGORONGORO CONSERVATION AREA (NSCAA), NGORONGORO.	
Client:	CONSOLIDATED TOURIST & HOTEL INVESTMENT, P.O. Box 1021, ARUSHA, TANZANIA.	
Drawing Type:	NEW DOUBLE SUITE (TYPE 1)	
Job No:	285	Date: March 2025
Drawing No:	127	Issue Date: Mar 2025
Scale:	(1:120)	Revised:
Drawn:	A.J.L.C	Checked:
KAPWANI ARCHITECTS LTD P.O. BOX 2339 Mobile: 255 713 225755 E-mail: kashokapwani@gmail.com ARUSHA		



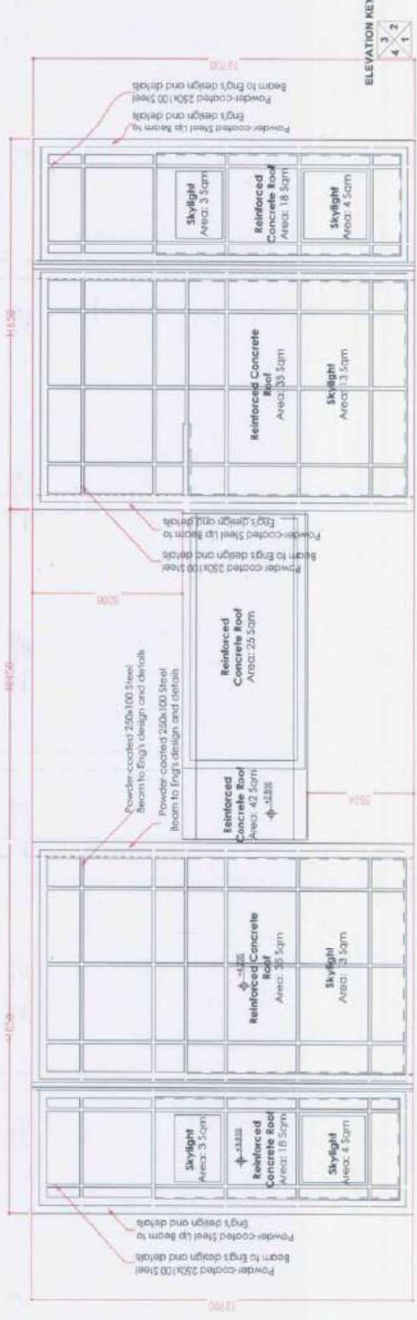
2 UNITS

FLOOR PLAN
SCALE: 1:100

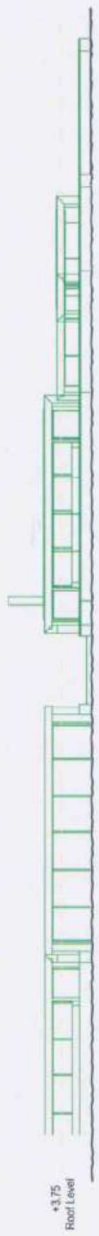


REV	DESCRIPTION	ISSUE
01	PROPOSED REFURBISHMENT AND EXTENSION OF THE ROOF OF THE NGORONGORO CONSERVATION AREA (NCA) NGORONGORO.	
02	CLIENT: NGORONGORO DATED TOURIST & HOTEL INVESTMENT, P.O. Box 1823, ARUSHA, TANZANIA.	
Drawing Type: 320 DOUBLE SUITE (TYPE I)		
ROOF PLAN		
Job No: 205	Date: March 2025	
Drawing No: 128	Issue Date: Mar 2025	
Scale (if A3): 1:100	Revision:	
Drawn: A. E. K.	Checked: R.S.K.	

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 Mobile: 255 713 225755
 E-mail: rashidkapwani@gmail.com
 ARUSHA



ROOF PLAN
 SCALE: 1/100
 2 UNITS



ELEVATION 3 (NORTH ELEVATION)
SCALE: 1/100



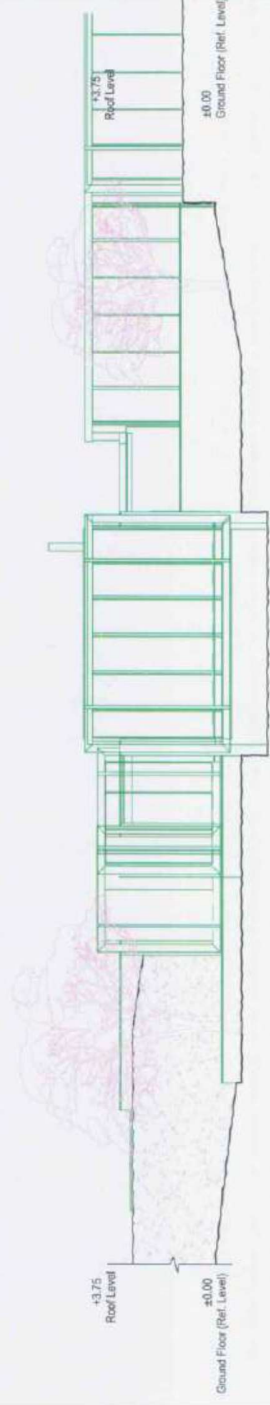
REV.	DESCRIPTION	ISSUE
1	PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOFA LODGES AT THE NGORONGORO CONSERVATION AREA (NCAA), NGORONGORO.	

Client
CONSOLIDATED TOURIST & HOTEL INVESTMENT, INVESTMENT, INVESTMENT, INVESTMENT, ARUSHA, TANZANIA.

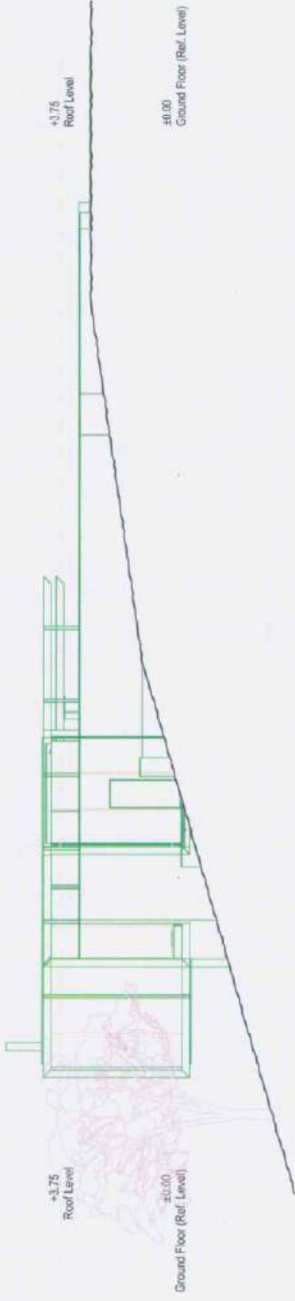
Drawing Type
NSO DOUBLE SUITE (TYPE 1) ELEVATIONS

Job No: 205	Date: March 2025
Drawing No: 129	Issue Date: Mar 2025
Scale (to A3): 1:100	Revised:
Drawn: A.E.K	Checked: R.S.K

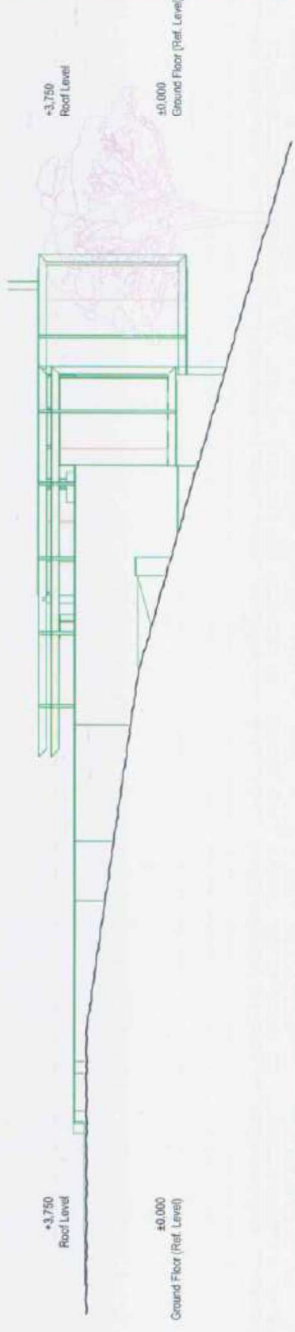
KAPWANI ARCHITECTS LTD
P.O BOX 2339
Mobile: 255 713 225755
E-mail: rashikapwani@gmail.com
ARUSHA



ELEVATION 1 (SOUTH ELEVATION)
SCALE: 1/100



ELEVATION 2 (EAST ELEVATION)
SCALE: 1/100



ELEVATION 4 (WEST ELEVATION)
SCALE: 1/100



REV	DESCRIPTION	DATE

Project Title: PROPOSED REFURBISHMENT AND EXTENSION OF NGORONGORO SOFA LODGES AT THE NGORONGORO CONSERVATION AREA (NGAAN, NGORONGORO).

Client: CONSOLIDATED TOURIST & HOTEL COMPANY LIMITED, P.O. BOX 2339, ARUSHA, TANZANIA.

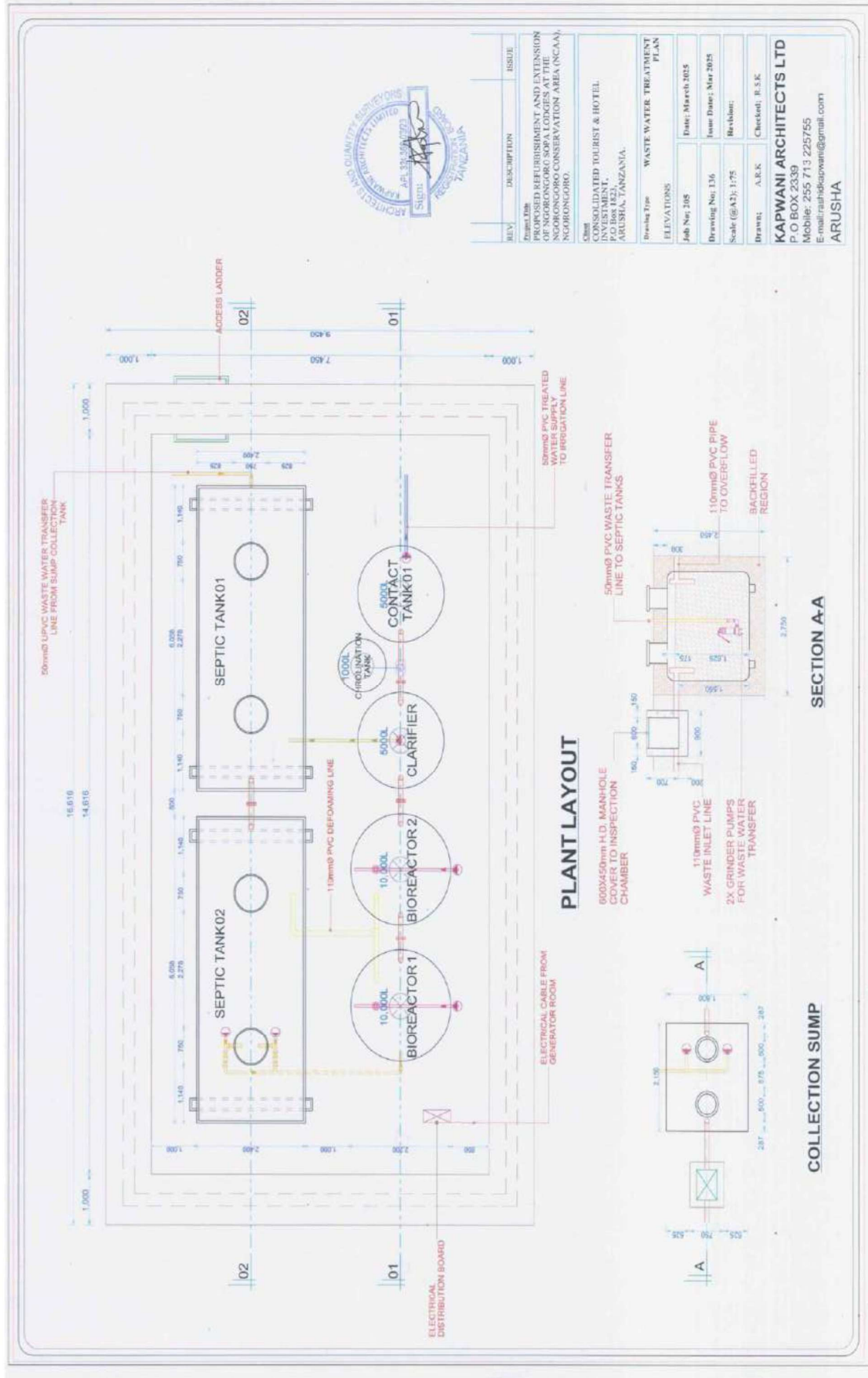
Drawing Type: S28 DOUBLE SUITE (TYPE 1)

ELEVATIONS

Job No: 205	Date: March 2025
Drawing No: E30	Issue Date: Mar 2025
Scale (S.A.): 1:100	Revision:
Drawn: A.E.K.	Checked: R.S.K.

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Appendix 17: Proposed Waste water treatment plant design





REV	DESCRIPTION	ISSUE

Project Title: PROPOSED REFURBISHMENT AND EXTENSION OF MICHOKORO SOPA LODGES AT THE MICHOKORO CONSERVATION AREA (MCAA), MICHOKORO.

Client: CONSOLIDATED TOURIST & HOTEL DEVELOPMENT LTD, P.O. BOX 1001, ARUSHA, TANZANIA.

Project Type: WASTE WATER TREATMENT PLANT

ELEVATIONS

Job No:	205
Date:	March 2025
Issue No:	137
Issue Date:	Mar 2025
Revised:	

Scale (S.A.): 1:75

Drawn: A.R.K
Checked: R.S.K

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Mobile: 255 713 225755
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ARUSHA

