ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN FOR CONSTRUCTION OF A TEACHING COMPLEX AND ODeL HUB AT KAMUZU UNIVERSITY OF HEALTH SCIENCES (LILONGWE CAMPUS)

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Executive Summary

1.1 Background

The Government of Malawi, in collaboration with the Ministry of Education and the Kamuzu University of Health Sciences (KUHeS), Lilongwe Campus, is currently implementing the Skills for A Vibrant Economy (SAVE) Project. The project will construct a teaching complex and an open and distance learning (ODeL) hub. The SAVE project is expected to be implemented over a period of five years (2021–2026). However, the development of infrastructure at KUHeS is expected to be implemented from 2024 to 2025. The SAVE Project Development Objective (PDO) aims to increase access to labor market-relevant skills development programmes in participating institutions, targeting priority areas of the economy, particularly for females. The Environmental and Social Management Framework (ESMF) for the SAVE project was prepared. The ESMF requires that after subprojects have been identified, an environmental and social due diligence be conducted to eliminate or reduce both environmental and social negative impacts. This is also in line with the Environmental Management Act (EMA) 2017 which stipulates that an environmental assessment is required for specific projects which have potentially significant environmental and social impacts.

Initial environmental and social screening determined that the project should develop an Environmental and Social Management Plan (ESMP) which will enable mitigation of adverse environmental and social impacts and enhancement of the positive environmental and social impacts. Therefore, this ESMP has been developed for the construction of a teaching complex and an open and distance-learning (OdeL) hub at the Kamuzu University of Health Sciences (KUHeS) at the Lilongwe campus. The estimated cost of the project is MWK 9,000,000,000.00 (approximately US$D 5,000,0000.00) which includes all costs associated with construction works. The project is located within the demarcated KUHeS campus. Approximately 120 people are expected to be employed during the construction phase. When employing workers, the Contractor is expected to give women equal employment opportunities as men by ensuring that at least 40% of the employees will belong to either gender category.

1.2 Project Justification

The establishment of Kamuzu University of Heath Sciences requires that the college should expand in terms of the provision of modern infrastructure to enhance the effectiveness and efficiency of the provision of teaching services and related activities. Current infrastructure is inadequate to meet these needs. Additionally, the University's Vision is to become a world-class University and Centre of excellence in health education, research, and innovation. Its mission is to advance knowledge, professional competencies, skills, and innovations in health sciences through high-quality student-centred and innovative education and research that influences the global/national policy, health, and development needs in an efficient, sustainable, and result-

oriented manner. Therefore, the construction of the teaching complex and the ODeL Hub project is a well-justified response to the University's vision.

1.3 Objective of the Project

The project's objective is to increase enrolment and improve the efficiency and effectiveness of teaching practices by investing in modern infrastructure and innovative teaching methods. The establishment of this innovative structure signifies advancement in addressing emerging health issues and elevating the field of health sciences.

1.4 Nature and Scope of the Project

The proposed project will involve the construction and operation of an office complex and the ODeL hub which comprises offices, toilets, seminar rooms adaptable for classes, washrooms, general laboratories, anatomy laboratory, morgue, and a recycle room. The project will also construct an administrative section, which will facilitate the smooth functioning of educational activities, while specialised rooms such as the anatomy room, dissection laboratory, waiting area, and body-receiving area will complement the educational facilities provided.

1.5 Justification of the ESMP

In line with the Environmental Management Act (EMA) of 2017 and the World Bank Environmental and Social Framework (ESF), a screening exercise was conducted to determine the necessary environmental and social assessment for the proposed project. This project involves the construction of a teaching complex and the OdeL hub, along with associated facilities. The screening revealed the need to develop an Environmental and Social Management Plan (ESMP) to ensure that potential environmental and social impacts are adequately addressed during the execution of these construction works.

1.6 Main Objective of the ESMP

The main objective is to evaluate and anticipate both potential positive and negative social and environmental impacts, as well as to formulate appropriate measures to enhance and mitigate these impacts.

Specifically, the project aims to:

- Assess the alignment of the proposed project with the local environmental and social conditions of the project area.
- Conduct a detailed examination of the potential adverse environmental and social aspects and their associated impacts.
- Recommend suitable enhancement and mitigation measures for both significant positive and negative impacts; and
- Develop a costed ESMP framework that includes mechanisms for monitoring and evaluating compliance and environmental performance.

1.7 Methodology in Preparing the ESMP

The assessment process entailed several fundamental stages, which encompassed desk studies, physical site inspection and examination of the neighbouring areas, engaging in consultations with stakeholders, and culminating in the compilation and documentation of the assessment findings. The baseline data collection was carried out from 11th to 29th September 2023,

1.8 Summary of Anticipated Environmental and Social Impacts

The key potential biophysical and socioeconomic impacts of the project are presented below:

Positive Impacts

Increased students' intake at the University and education through e-learning

Enhancement measures

- Employ more academic and non-academic staff members.
- Continuously maintain the infrastructure to keep it in good shape to facilitate teaching and learning; and
- Diversify the number of courses offered at the University.

Creation of employment opportunities

Enhancement measures

- Employ more Malawians where skills and more qualified Malawians are available for both academic and non-academic members of staff and from the community members around the University for ground labourers and office assistants; and
- Give equal employment opportunities to both men and women by ensuring that at least 40% of the employees are women.

Improved teaching and learning at the University.

Enhancement measures

- Provide the necessary equipment to facilitate teaching and learning.
- Sound proofing should be considered in the lecture theatres and the public hub to avoid disruption, since the University will also be used by the public.
- Utilise the building flyers and corridors that have good lighting and shielding as excellent study areas or for small group discussions.
- Provide outside teaching and outdoor study spaces to enhance the teaching and learning environments.
- Recruit well qualified academic and non-academic members of staff; and
- Maintain all equipment and infrastructure to be used for teaching and learning.

Enhanced visual outlook of the University.

Enhancement measures

- Consider having a green design with more landscape features
- The design should blend with the existing buildings for easy uniformity of the structures
- Provide good landscaping and spaces for students to relax outside the classroom and for group discussions within the landscape areas

- Construct a senior common room which can be used by postgraduates and lecturers.
- Provide good labelling of the facilities e.g. campus map, fire exit, emergency numbers etc
- The designs should have enhanced ventilation and use of natural lighting (consider eco-designs and big windows)
- Ensure that the design of the buildings has security features such as alarms and fire escape systems.

Negative Impacts

Soil pollution due to the generation of solid waste and hazardous materials (for example, Biomedical Waste)

Mitigation measures

- Contract a private waste handler licenced by the EAD for waste disposal.
- Use the 3Rs (reduce, reuse, and recycling) principle for different types of wastes.
- The project will construct a temporary waste storage facility, as the project will increase the number of people on campus.
- Provide a separate system for management of health care waste separate from the general waste from the building i.e. including biomedical waste, dirty and clean areas, waste handling and storage, exhaust systems, material types for surfacing and benches, floors.
- Provide a waste storage area within the facility for handling biomedical waste and at minimum should be provided with impervious surface, designed for cleaning, disinfection with available water supply, well secured, proper lighting and ventilation, segregated from food supply areas, and provision for protective equipment storage site.
- Increasing the number of toilets (connected to sewer system) to match the demand and projections for students.
- Segregate wastes by providing different bins for each type of waste.
- KUHeS shall ensure that hazardous and biomedical wastes are disposed of in accordance with local regulations and best practices, such as authorized waste management facilities or specialized treatment methods (e.g. autoclaving and chemical treatment).
- Providing comprehensive training and education programs for laboratory staff and students on proper waste management practices, including waste segregation, labelling, and disposal procedures, to minimize the risk of environmental contamination and health hazards; and
- Maintain dumping sites that will be identified during construction.

Increased noise pollution due to construction works

Mitigation measures

- Restrict noisy construction activities to normal working hours (7:30 am – 4:30 pm).
- Inform residents beforehand, via notices and advisories, of pending noisy periods, solicit their tolerance well before the commencement of piling works, limit the idling time for trucks and equipment to 5 minutes.
- Equip workers operating equipment that generates noise with noise protection gear, including earmuffs and plugs. Workers operating equipment that generates noise levels greater than 80 dBA continuously for 8 hours or more should use earmuffs, whereas those experiencing prolonged noise levels of 70 – 80 dBA should wear earplugs.
- Regularly inspect and service all construction equipment; and

- Fit construction vehicles with silencers to reduce noise.

Increased cases of Gender Based Violence (GBV)
Mitigation measures
- Orient workers on the GBV issues.
- Hire GBV service provider.
- Ensure that all workers sign the code of conduct developed by the project; and
- Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry GBV awareness campaigns around the project area.

Increased cases of Sexual harassment
Mitigation measures
- Orient workers on the sexual harassment issues.
- Hire GBV service provider.
- Ensure that all workers sign the code of conduct developed by the project; and
- Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out sexual harassment awareness campaigns around the project area.

Increased cases of Sexual Exploitation Abuse (SEA)
Mitigation measures
- Orient workers on the Sexual Exploitation and Abuse issues.
- Hire GBV service provider.
- Ensure that all workers sign the code of conduct developed by the project; and
- Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out sexual exploitation and abuse awareness campaigns around the project area.

Increased cases of injuries and loss of lives to communities
Mitigation measures
- Keep staff, students, and any unauthorized persons away from construction sites and dangerous zones by fencing off the site.
- Install warning signs (written in English and local languages) at strategic sites.
- Train all workers for the proper use and handling of equipment.
- Implement regular health screening for workers, such as those with COVID-19 and other communicable diseases and provide measures for the treatment of positive cases.
- Supply PPEs to prevent the spread of communicable diseases, for example, COVID-19;
- Distribute condoms and other prevention measures for HIV and AIDs; and
- Place signposts indicating “Danger equipment” “Pedestrian walking”, “No parking”, “Stop” etc. shall be placed in critical areas on the project site.

Labour influx due to construction works.
Mitigation measures
- Prohibit the gate employment of people, but rather follow formal employment procedures.

- Contractor to develop a labor influx management plan, (whenever the number of employees are significant to affect the local available labor force).
- Implement the labor laws of Malawi.

Increased cases of HIV and AIDS
Mitigation measures

- Develop and implement an HIV and AIDS policy and a prevention, treatment, care, and support programme.
- Sensitise staff and learners on HIV and AIDS prevention.
- Free condoms to be made available to staff; and
- Distribution of information, education and communication (IEC) materials on STIs including HIV and AIDS

Increased cases of child and forced labour.
Mitigation measures

- Orient the Contractor and community members on child safety management.
- Prohibit employment of children at the project site;
- Check ID's before employing workers; and
- Coordinate with the District Officer, Gender, Children, and Social Welfare and Ministry of Labor and the Police Department to conduct sensitization meetings with local chiefs, project administration, children, and community members on prohibition of any form of child labor and need to promote children's rights.

Injuries and loss of lives and properties due to fire.
Mitigation measures

- The project shall need to be designed to have an emergency exits outside the building, that is accessible to everyone.
- Installation of smoke alarms and sprinkler systems.
- Maintenance of all fire safety systems in proper working order, including self-closing doors in escape routes and ventilation ducts with fire safety flaps.
- Training of staff for operation of fire extinguishers, carry out routine fire drills and evacuation procedures.
- Development of facility fire prevention or emergency response and evacuation plans with adequate guest information (this information should be displayed in obvious locations and clearly written in relevant languages).
- Fire control measures should be placed appropriately according to the requirements of the Lilongwe City Assembly laws.
- Properly label the fire exit doors within the building.

Increased road accidents
Mitigation measures

- Place in the vicinity of the entrance to the site, with appropriate traffic warning signs instructing occupants and visitors to reduce speed.
- The site has a challenging topography, hence the deigns need to have raised walkways

connecting the buildings through stairs and ramps,

- Instruct security guards to control traffic along the private road leading to the University and assist vehicles as they enter and exit the University.
- Contractor will need to develop and implement an Occupational Health and Safety Plan.
- A record of incidents and accidents on roads leading to the campus will be maintained.
- Develop an emergency response procedure and develop and display at the entrance to the campus; and
- Display contacts of emergency service providers including vehicle breakdown and traffic police at the main entrance to the University.

Increased pressure on existing water and energy supply
Mitigation measures

- Fix any water leaks through damaged pipes and faulty taps promptly by a licenced plumber.
- Use of flat roofs where solar energy is installed.
- Additionally, flat roofs should make a provision for the future expansion of additional floors on the top.
- Sensitise the occupants of the offices and teaching facilities and library to conserve energy and water; and
- Monitor water and energy use and set targets for efficient usage.

1.9 Conclusion

An assessment of the project has revealed some potential biophysical environmental and socio-economic impacts, which are likely to emanate from project activities. In this regard, the proponent must comply with the best environmental and social management practices proposed in the ESMP. The implementation of mitigation measures for this plan is expected to cost MK 71,500,000 during the construction and demobilisation phases. The environmental and social monitoring plan provides for monitoring to verify the implementation of the enhancement and mitigation measures proposed in the ESMP. Regarding monitoring, the cost of monitoring the implementation of proposed environmental and social measures during the construction phase is estimated at MWK 25,850,000.00.

1.10 Recommendations

It is recommended that strict monitoring measures be instituted from both engineering and environmental standpoints, considering the need to protect the environment while achieving economic development. This will ensure that the project adheres to acceptable practices and standards. Additionally, the project has a high risk of GBV, SEA, and SH issues; hence, there is a need to hire a GBV service provider.

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List of Acronyms and Abbreviations

AIDS	Acquired immunodeficiency syndrome.
AoI	Area of impact
CoC	Code of conduct
COVID-19	Coronavirus Disease 2019
CSDCs	Community Skills Development Centres
CTUs	Community Technical Universities
DESC	District Environmental Subcommittee
dB	Decibel
EMA	Environment Management Act.
ESCOM	Electricity Supply Corporation of Malawi
ESA	Environmental and Social Assessment
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework.
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
FGD	Focus Group Discussion
GBV	Gender-Based Violence
GoM	Government of Malawi
GRM	Grievance Redress Management
GRPs	Grievance Redress Procedures
GVH	Group Village Headman
HIV	Human Immunodeficiency Virus
KUHeS	Kamuzu University of Health Sciences
IDA	International Development Association
IEC	Information, Education, And Communication
IFC	International Finance Corporation
IPF	Investment Project Financing
KII	Key Informant Interviews
LMP	Labour Management Plan
LCC	Lilongwe City Council
MDGs	Millennium Development Goals
MEPA	Malawi Environment Protection Authority
NCIC	National Construction Industry Council
NEAP	National Environment Action Plan
NWRA	National Water Resources Authority

MGDS	Malawi Growth and Development Strategy
MoE	Ministry of Education
KUHeS	Kamuzu University of Health Sciences
ODeL	Open and Distance Learning
OHS	Occupational Health and Safety
OSHWA	Occupation Safety Health and Welfare Act
PTUs	Private Technical Universities
PDO	Project Development Objective
PPE	Personal Protective Equipment
SAVE	Skills for a Vibrant Economy
SDG	Sustainable Development
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SGBV	Sexual and Gender-Based Violence
SH	Sexual Harassment
STI	Sexually Transmitted Infection
SWAp	Sector Wide Approach
TA	Traditional Authority
TEVETA	Technical, Entrepreneurial and Vocational Education and Training Authority
ToT	Trainer of Trainers
USAID	United States Agency for International Development
VAWG	Violence Against Women and Girls
VEC	Valued Environmental Components
VOC	Volatile Organic Compound
VSU	Victim Support Units
WHO	World Health Organisation

Chapter one: Introduction

This is an Environmental and Social Management Plan (ESMP) for the construction of a teaching complex and an ODeL Hub under the Skills for A Vibrant Economy (SAVE) project. This chapter provides essential background information of the project, details about the project proponent, the rationale behind the project, the objectives for developing the Environmental and Social Management Plan (ESMP), methodology employed and potential users of the ESMP.

1.1 Background Information

Kamuzu University of Health Sciences (KUHeS) in Lilongwe intends to construct a teaching complex and an Open and Distance e-Learning (ODeL) Hub under the Skills for A Vibrant Economy (SAVE) project. This will enhance access to quality education, particularly for female students, while addressing labour market demands. The project's objective is to increase enrolment and improve the efficiency and effectiveness of teaching practices by investing in modern infrastructure and innovative teaching methods. This investment in education and human capital development underscores KUHeS' commitment to empowering students and educators alike, contributing to Malawi's socioeconomic advancement. The implementation of construction phase of the project is expected to be from 2024 to 2026. The estimated cost of the project is MWK 9,000,000,000 (approximately US$ 5 million) funded through a combination of a loan and grant totalling US$100 million from the International Development Association (IDA) of the World Bank Group allocated to the Government of the Republic of Malawi. During the construction phase, approximately 120 individuals will be employed at the project site. At least 40% of the workforce comprising individuals from either gender category. Employees will include skilled and unskilled labour force.

1.2 Details of the Project Proponent

The contact details for the developer are as follows:

Proponent name:	Prof MacPherson Mallewa The Vice Chancellor, Kamuzu University of Health Sciences
Postal Address:	Private Bag 360, Chichiri, Blantyre 3
Email:	save-com@kuhes.ac.mw
Tel:	+265 01 873 623

1.3 Nature and Scope of the Project

The scope encompasses the creation of a teaching complex featuring essential housing facilities, such as offices, lecture theatres, laboratories, and seminar rooms adaptable for classes, washrooms, and administrative spaces. The project will also construct an administration block, which will facilitate the smooth functioning of educational activities, while specialised rooms like the

anatomy room, dissection laboratory, waiting area, and body receiving area will complement the educational facilities provided. Additionally, specialized areas, including anatomy rooms, dissection laboratories, and waiting areas, will be incorporated to facilitate practical learning experiences. The ODeL hub will further modernize educational delivery methods and foster innovation and entrepreneurship among students.

The activities of the project will be implemented in four phases namely: planning, construction, demobilization, and operation and maintenance. At present, the project is at the planning and design stage, where the developer obtains different permits and approvals for the project, conducting perimeter and topographic surveys, conducting feasibility studies, detailed engineering designs, preparing drawings, and conducting environmental and social impact assessments for the project.

1.4 Project location

Kamuzu University of Health Sciences (KUHeS) has two campuses: Blantyre and Lilongwe. The project will be implemented at Lilongwe campus, in Lilongwe City. The campus is located close to the Kamuzu Central Hospital. The proposed teaching complex and ODeL hub facility will be constructed in an open space surrounded by existing buildings. The project will be developed within the campus of KUHeS which is public land. The project is expected to be implemented in an area of not more than 0.3 hectors.

Figure 1- 1: Proposed site for the construction of the teaching complex and OdeL Hub

The proposed project is located at coordinates; 13°58’ 47” S and 33 °47’10″ E, at an elevation of 1053 m above sea level. Figures 1-2 and 1-3 show the location maps of the project.

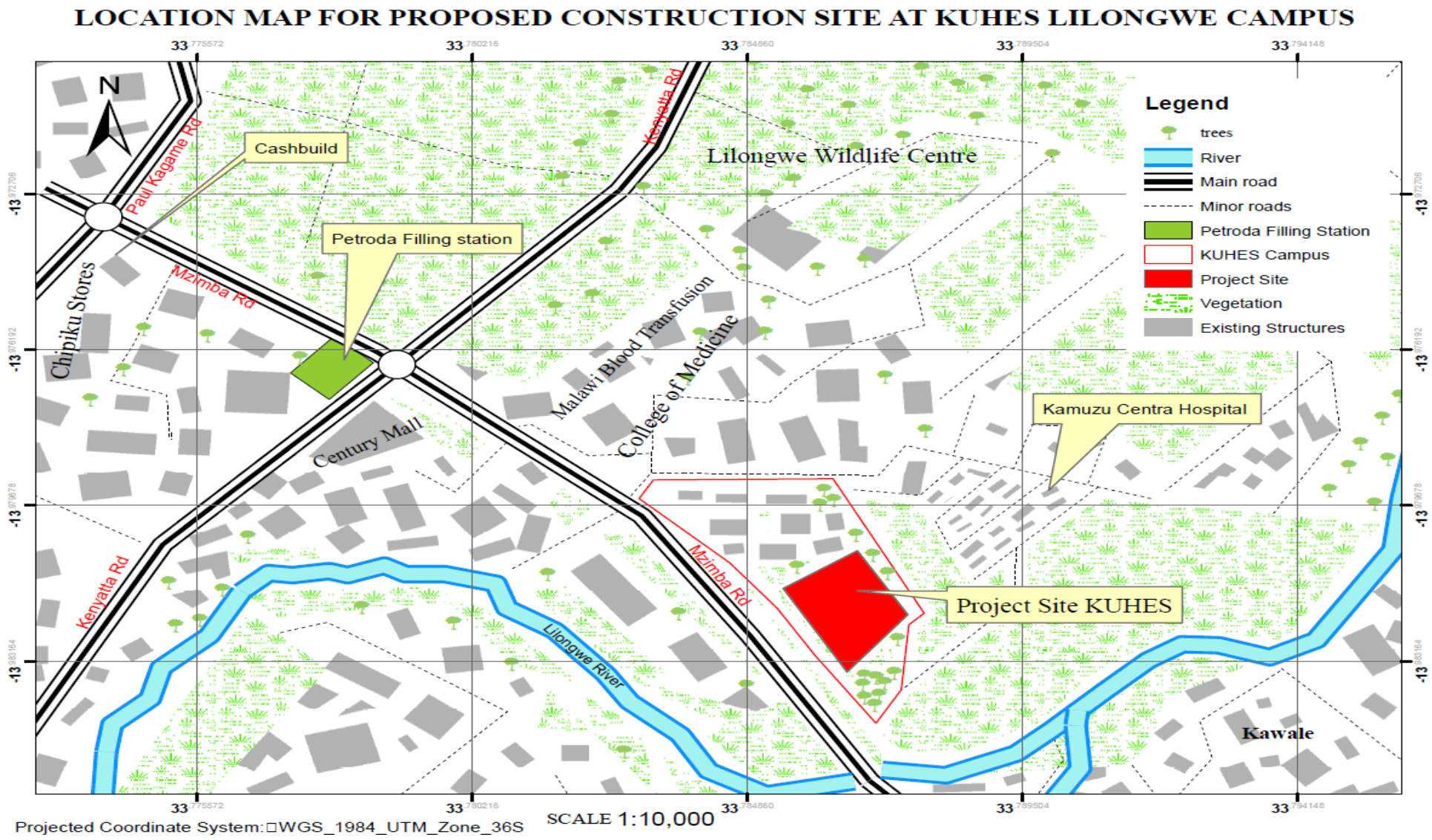


Figure 1- 2: Map showing the location of the project site (1:10,000 scale)

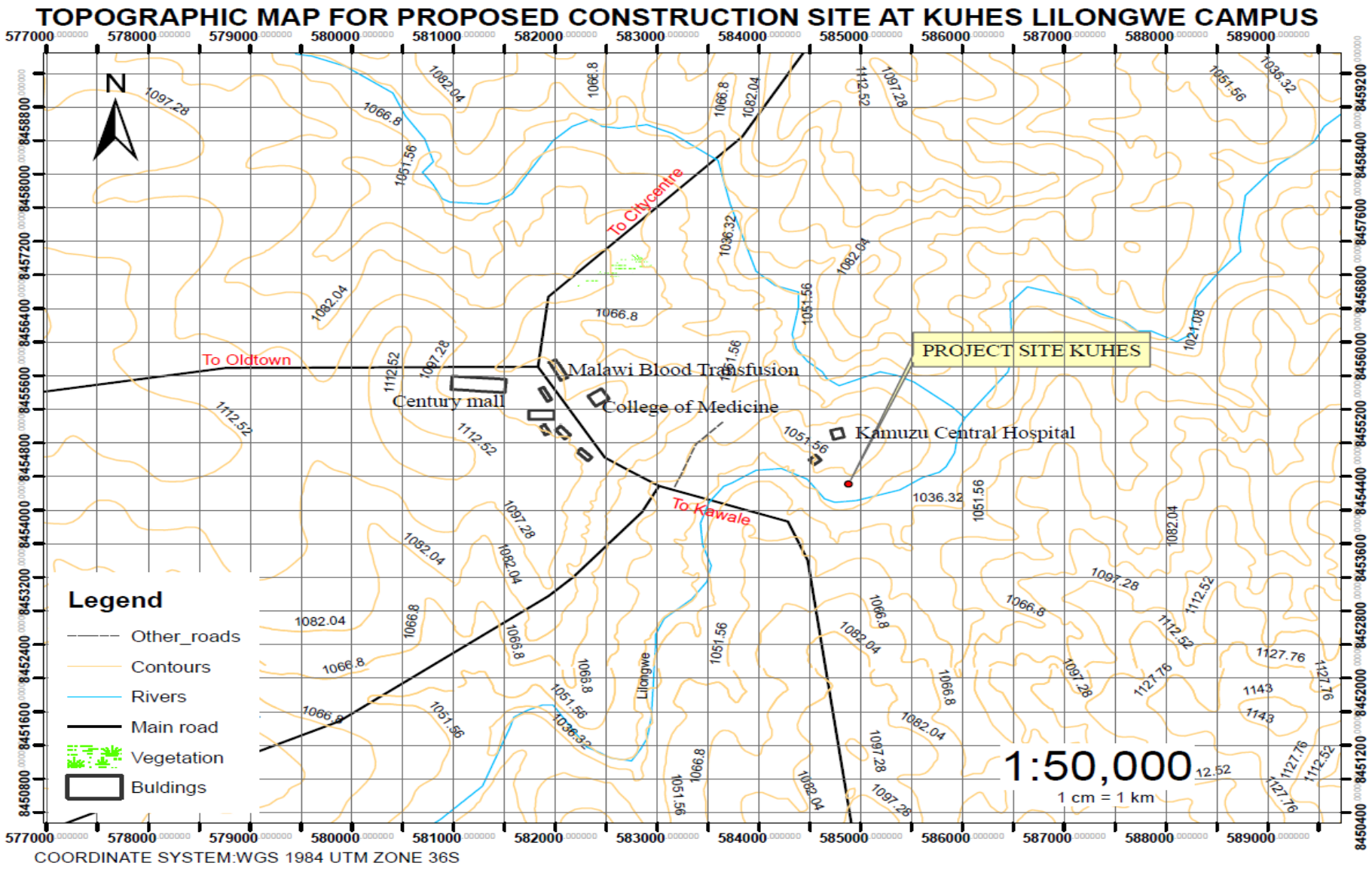


Figure 1- 3: Map showing the location of the project site (1:50,000 scale)

1.4 Objective of the Project

The project's core objective is to construct and fully equip a teaching complex and the ODeL hub at Kamuzu University of Health Sciences in Lilongwe. The establishment of this innovative structure signifies a significant advancement in addressing emerging health issues and elevating the field of health sciences.

1.5 Project Justification

The construction of the teaching complex and OdeL Hub project is a well-justified response to critical needs in the Malawian economy. It aims to enhance access to skills aligned with priority sectors (gender equality and youth empowerment), strengthen the policy environment, build institutional capacity, and address systemic challenges in skill development. In summary, this project aims to equip individuals with essential skills to foster economic growth and social development in Malawi. The project's commitment to enhancing access to skills development and empowering women and girls is in direct alignment with the goal of ensuring inclusive and equitable quality education for all. This contributes to the advancement of SDG 4, particularly Target 4.5, which emphasises equal access to education and lifelong learning opportunities.

1.6 Spatial Location

The proposed project site is located within the existing KUHeS Lilongwe campus (Area 33). The surroundings of the project site are noteworthy, with the Central Medical Stores Trust situated to the east, ongoing construction of commercial buildings to the west, Mzimba Drive bordering it to the north, and the Lilongwe River running along its southern boundary at an approximate distance of 50 meters (Lilongwe River). Across Mzimba Drive to the north, the KUHeS campuses add prominence to the site'.

1.7 Land Ownership

The proposed site is situated within the KUHeS Gazetted land and is designated for academic purposes. Importantly, this classification aligns with ESS5 (Environmental and Social Standard 5), suggesting that there is no need for resettlement or additional land acquisition measures. Notably, the University currently lacks formal documentation pertaining to land ownership, since the land acquisition process took place in the early 1980s. However, it is worth noting that the University is actively engaged in the process of securing the necessary land ownership documents for the campus. This ongoing effort underscores the 'University's commitment to ensuring the legality and ownership of the land.

1.8 Justification of the ESMP

In line with the Environmental Management Act (EMA) of 2017 and the World Bank Environmental and Social Framework (ESF), a screening exercise was carried out to determine the necessary environmental and social assessment for the proposed project. This project involves the construction of a teaching complex and ODeL hub. The screening revealed the need to develop

an Environmental and Social Management Plan (ESMP) to ensure that potential environmental and social impacts are adequately addressed during the execution of these construction works.

1. 9 Main Objective of the ESMP

The main objective is to evaluate and anticipate both potential positive and negative social and environmental impacts, as well as to formulate appropriate measures to enhance and mitigate these impacts, respectively.

1. 10 Specific Objectives of the ESMP

The specific objectives of the ESMP study were as follows:

- Determine the compatibility of the proposed project with the local environmental and social conditions of the project area.
- Examine, in detail the likely adverse environmental and social aspects and associated impacts.
- Propose appropriate enhancement and mitigation measures for significant positive and negative effects respectively.
- Develop a costed ESMP framework with mechanisms for monitoring and evaluating compliance and environmental performance.

The ESMP requires conforming to the applicable environmental and social regulatory framework of the Government of Malawi, and the World Bank Environmental and Social Framework (ESF).

The scope of the ESMP was to:

i. Assess the existing baseline status of the biophysical and socioeconomic environment within the projects area of impact.
ii. Identify the probable adverse and positive environmental and social risks and impacts due to the planned project during its entire cycle, that is., from pre-construction to construction to operation and maintenance.
iii. Identify stakeholders and various groups or institutions who are either affected or have an interest or a stake in the project, with emphasis on disadvantaged and vulnerable groups and carry out consultations with stakeholders to help solicit their concerns, suggestions, and support.
iv. Consider all environmental and social standards relevant in the project for further usage towards preparation of requisite mitigation plans, as may be required.
v. Conduct additional studies, if any, for the enhancement of the benefit to the local community.
vi. Preparation of an ESMP including monitoring plan and budget.
vii. Assess the proponent's institutional setup for managing proposed project activities and propose additional resources (hiring of specialists, training, etc.).

1.11 Methodology in Preparing the ESMP

The assessment process entailed several fundamental stages, which encompassed desk studies, a physical site inspection and examination of the neighbouring areas, engaging in consultations with stakeholders, and culminating in the compilation and documentation of the assessment findings.

1.11.1 Desk Study

A desk study entailed a comprehensive examination of diverse project-related documents, which encompassed Environmental and Social Screening reports, the project's Environmental and Social Management Framework, the Stakeholder Engagement Plan, Labour Management Procedures, the Environmental and Social Commitment Plan, and the World Bank Environmental and Social Framework. The assessment involved a review of relevant national regulations, which included, but were not limited to, the Environment Management Act (2017), Education Act (2013), National Girls Education Strategy (2019), National Education Standards (2015), Local Government Act (1998), Forestry Act (1997), Land Act (2016), Occupational Safety, Health, and Welfare Act (1997), Water Resources Act (2013), Child Care, Protection, and Justice Act (2010), Gender Equality Act (2013), HIV and AIDS (Prevention and Management) Act (2018), Sanitation Policy (2008), Malawi National Land Policy (2002), Public Health Act (1948), Land Act (2021), and various other relevant legislation and policies.

1.11.2 Baseline Surveys (Physical Inspection of Project Sites)

The study team conducted field surveys at the project sites from 11th to 29th September 2023, to observe and collect baseline data on the existing environment, mainly landscape and visual features, ecological aspects concerning flora and fauna, and the socioeconomic environment, among other pertinent factors. These specialised studies played a pivotal role in the identification and assessment of potential environmental and social impacts that may arise because of the project.

1.11.3 Stakeholder Consultations

Consultations played a pivotal role in the development of the ESMP, serving to address potential anxieties and concerns that might arise from the project. This, in turn, aimed to enhance the project's acceptance among both local communities and government authorities. Furthermore, consultations facilitated the incorporation of diverse perspectives from various stakeholders, including government officials and community members, with the goal of formulating strategies to prevent or mitigate adverse impacts while maximising positive impacts. Stakeholder consultations remained an ongoing process throughout the study period. These consultations were conducted in accordance with Annex G on page 46 of the 1997 Guidelines for ESIA. A brief description of how each method of conducting public consultations was executed is provided as follows:

1.11.3.1 Key Informant Interviews (KII) and Focus Group Discussions (FGDs)

Key Informant Interviews (KIIs) were employed in the data collection process because of their capacity to complement Focus Group Discussions (FGD). At the City level, the key informants included representatives from the city council development committee. Additionally, KIIs were conducted with key project team members at KUHeS, students, executive deans, heads of departments, and the project's Gender and Resource Management (GRM) committee. These interviews aimed to gather valuable insights into various key issues discussed during the consultations. A summary of the key issues raised by KIIs is provided in the annex Table 2.6.

1.11.3.2 Community Focus Group Discussions

The project's impact areas primarily focused on the campus itself and is not expected to significantly affect the surrounding residential communities. Focus Group Discussions (FGDs) were conducted to gain insights and perspectives on this impact, involving both academic and support staff as well as male and female learners. FGDs were chosen because of their capacity to create a relatively less intimidating environment, which encouraged participants to openly discuss their views and experiences. This approach allowed for a reflective discussion of participants' perceptions, facilitating the clarification of issues, and providing the study team with deeper insights into the matter. Evidence of FGD participants can be found in the provided annex, and the key issues identified are detailed in the same annexes.

1.12 Potential users of the ESMP

The ESMP has been prepared as a valuable resource for various stakeholders engaged in the planning, execution, management, and monitoring of proposed project activities. Some of the key users include the World Bank, KUHeS staff and students, Ministry of Labour, SAVE-PIU, non-governmental organisations (NGOs), the Ministry of Education, the Students Representative Council, the Contractor, Lilongwe District and City Councils, the Malawi Environment Protection Authority (MEPA), and the Ministry of Lands, Housing, and Urban Development and KUHeS surrounding community members. The report contains essential information related to policies and procedures that must be adhered to, the implementation methods, an analysis of potential environmental and social impacts, and proposed mitigation measures at different stages of project activities. This comprehensive document serves as a guide for effective project management and ensures compliance with the relevant regulations and standards.

Chapter Two: Project Description

This chapter describes the project, anticipated materials to be used, estimated number of people to be employed, stage of the project in the project cycle, anticipated waste to be produced, and environmental and social considerations in the design.

2.1 Nature of the Project

The proposed project will involve the construction and operation of an office complex and an OdeL hub which will have offices, toilets, seminar rooms adaptable for classes, washrooms, laboratories, and a recycle room. An administrative section facilitates the smooth functioning of educational activities. The project will also construct an anatomy laboratory which will have a dissection laboratory, waiting area, mortuary, body show room, toilets, storeroom, night room, surface anatomy room, X-ray and DL storage room, and a dedicated office. Table 2-1 provide details of the facilities to be constructed and Figures 2-1 show the layout plan of the facilities and Figures 2-2 to 2-3 show the floor plan for the OdeL hub and teaching facility while Figures 2-4 to 2-5 show the floor plan of the anatomy laboratory.

Table 2- 1: Details and capacity of teaching complex and an OdeL hub

Component	Facility	Room numbers	Room size	Number &type of occupant	room location i.e. 1st floor	Type of equipment	Details of the facility
Anatomy Lab	Balcony	2	12sqm	4 students/ staff	first floor	TBD	
	Mortuary	1	700sqm	n/a	ground floor	TBD	Consist of Body collection room Body storage room, Coffin storage room, Preparatory area, Body dipping room and a coffin show room
	Museum	1	70sqm	30 students	TBD	TBD	Consist of a 2 museum storages and museum room
	Stores	2	4sqm	TBD	TBD	TBD	TBD
	Dissection Lab	1	70sqm	50 students and 1 staff member	ground floor	TBD	TBD
	Toilets	2	15sqm	4	ground floor	TBD	TBD
	Surface anatomy	1	14sqm	4 students and 1 staff member	ground floor	TBD	TBD
	Night room	1	16sqm	2 staff members	ground floor	TBD	TBD
	Preparatory Area	1	40sqm	6 staff members	first floor	TBD	TBD
	Kitchen	1	12sqm	3 staff members	first floor	TBD	TBD
	X-ray and DL storage	2	9sqm	2	ground floor	TBD	TBD
	Offices	5	65sqm	10 staff members	TBD	TBD	TBD
ODeL hub and	Physics Laboratory	1	150sqm	120 students	ground floor	High standard purpose made reception counter	Controlled access doors to Lab areas

teaching zone							
	Microbiology Lab	1	150sqm	120 students	ground floor	Modernised equipment for the laboratory	N/A
	Male and female change rooms	2	35sqm	10 occupants	ground floor and first floor	3rd Level Class (BSL-3)	To have tight closed windows and fixed with air conditioners
	Lecture Theatre 1	2	200sqm	1150 students	ground floor		Can be divided into 2 classrooms
	Recycling Centre	1	25sqm	n/a	ground floor	TBD	TBD
	Recording room	2	40sqm	3	first floor	Electronic and Studio/Video equipment and accessories	Room to have video link accessories for monitoring to an adjacent teaching classroom for videography
	Production room	1	30sqm	3	first floor	TBD	TBD
	Seminar rooms	4	42sqm	25 students	ground floor	Stand equipment	The bigger capacity to have a demarcation facility that would divide the rooms into two independent rooms
	Stuff Canteen	1	60sqm	20 staff members	ground floor	TBD	TBD
	Preparatory room	2	21sqm	4	ground floor	2 from ground floor.2 from first floor	Preparatory, control and storage rooms to form a related sequence flow route to facilitate operations
	Storage rooms	3	25sqm	2	both floors	2 first floor,1 ground	N/A
	Control room	1	40sqm	3	ground floor	Shelving and lockable cabinets	N/A

	Main hall	1	360sqm	400 students	ground floor		These could be used as smaller groups study rooms. Not a regular classroom shape in format
	Offices	12	25sqm	2 staff members	first floor	TBD	TBD
	Classroom	2	77sqm	75 student s	first floor	Production equipment	N/A
	Computer labs	2	77sqm	75 students	first floor		
	Maceration room	1	9sqm	2	first floor	Fixtures, power and other accessories	N/A
	ODel Auditorium	1	200sqm	250 student s	first floor	TBD	TBD
	Printery	1	50sqm	3	first floor	Recording units/ equip. Codeless cameras in critical areas	N/A
	Director	1	30sqm	1 staff member	first floor	Mirrors, dryer	Male and Female close to Theatres
	Male and female toilets and change rooms	2	35sqm	12 students or staff	ground floor and first floor		
	Deputy Director	1	30sqm	1 staff member	first floor	TBD	Separate structure/End attachment
	Secretary	1	15sqm	1 staff member	first floor	TBD	TBD
	Board room/Conference room	1	24sqm	15 staff members	first floor	TBD	Both the Directors will have a secretary's office each and a separate toilet
	Car park	1		TBD	TBD	TBD	
	Access road	1	TBD	30+- vehicles		combined maximum for both staff and visitors at one seating	TBD

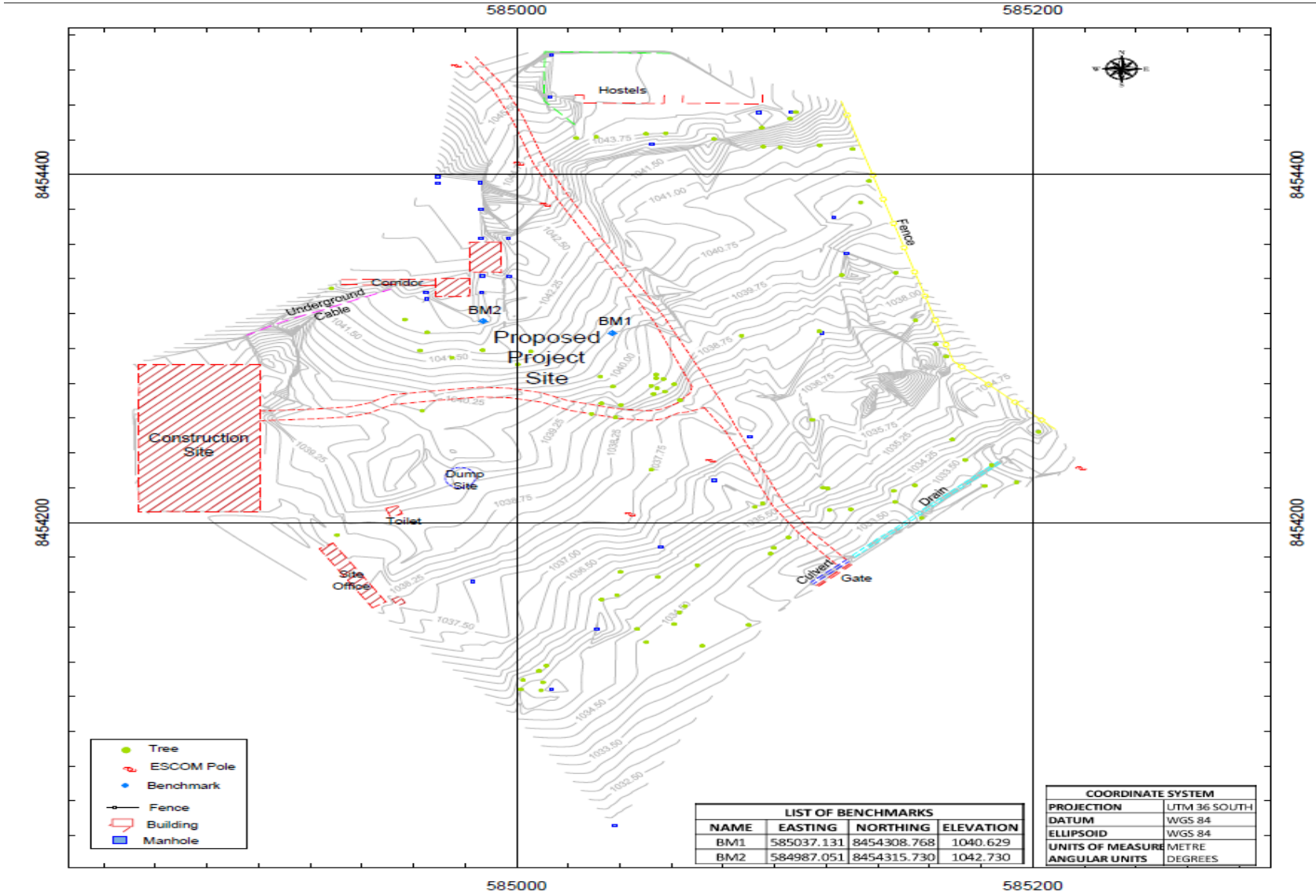


Figure 2- 1: Site layout plan (showing the teaching complex and OdeL hub and am Anatomy Laboratory

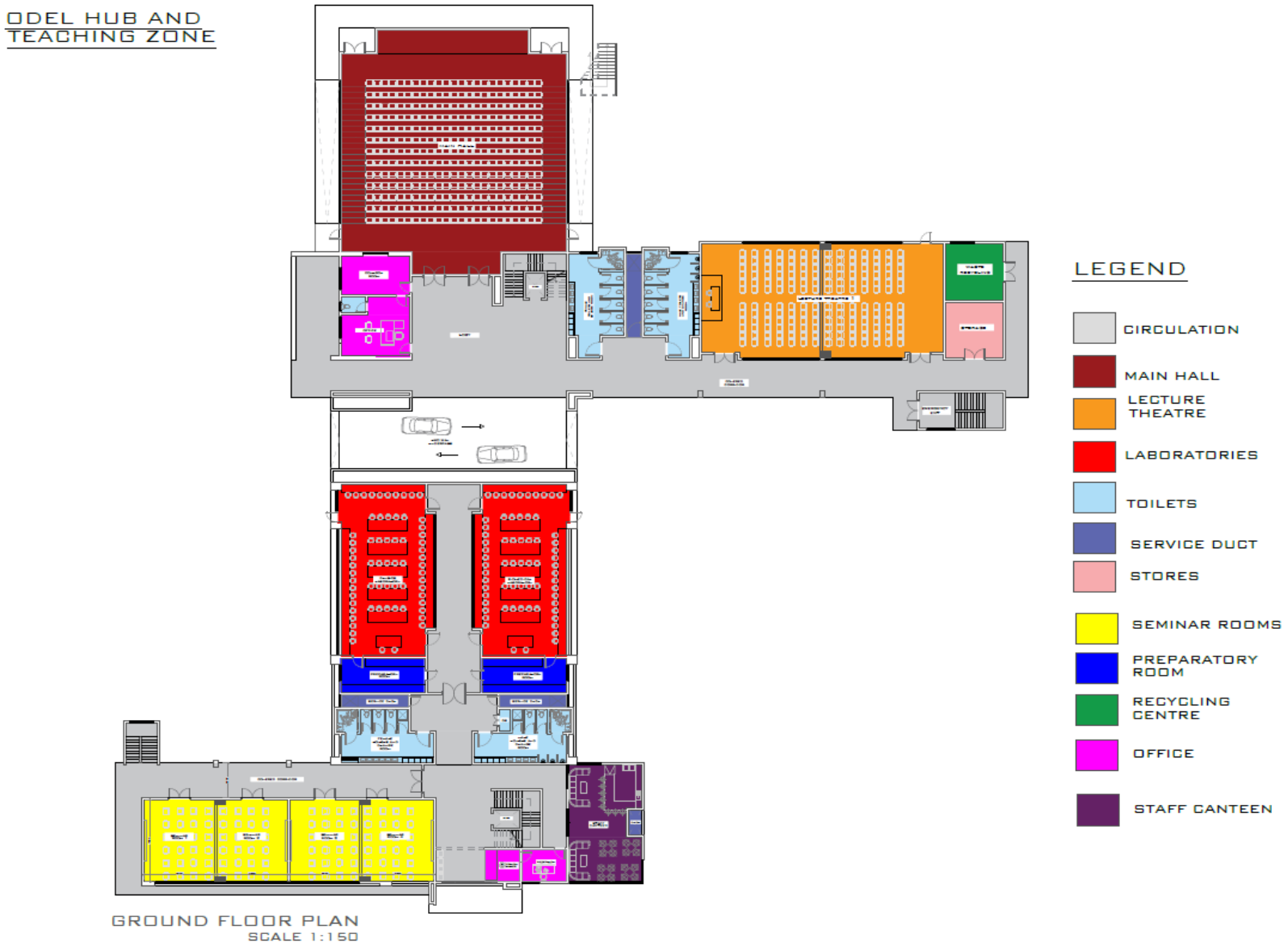


Figure 2- 2: Ground Floor of an OdeL Hub and Teaching Zone

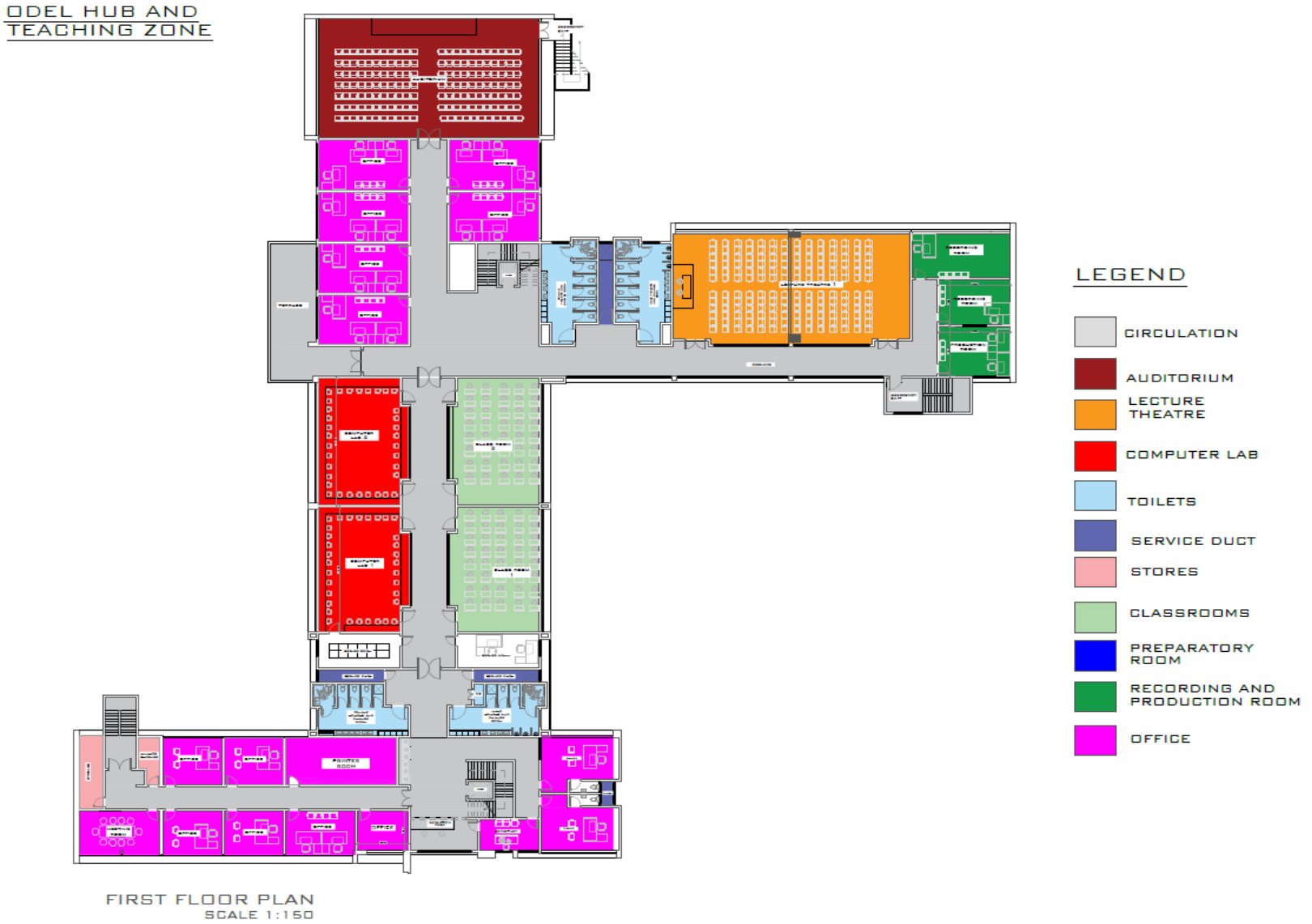


Figure 2- 3: First Floor of a Teaching Zone and OdeL hub

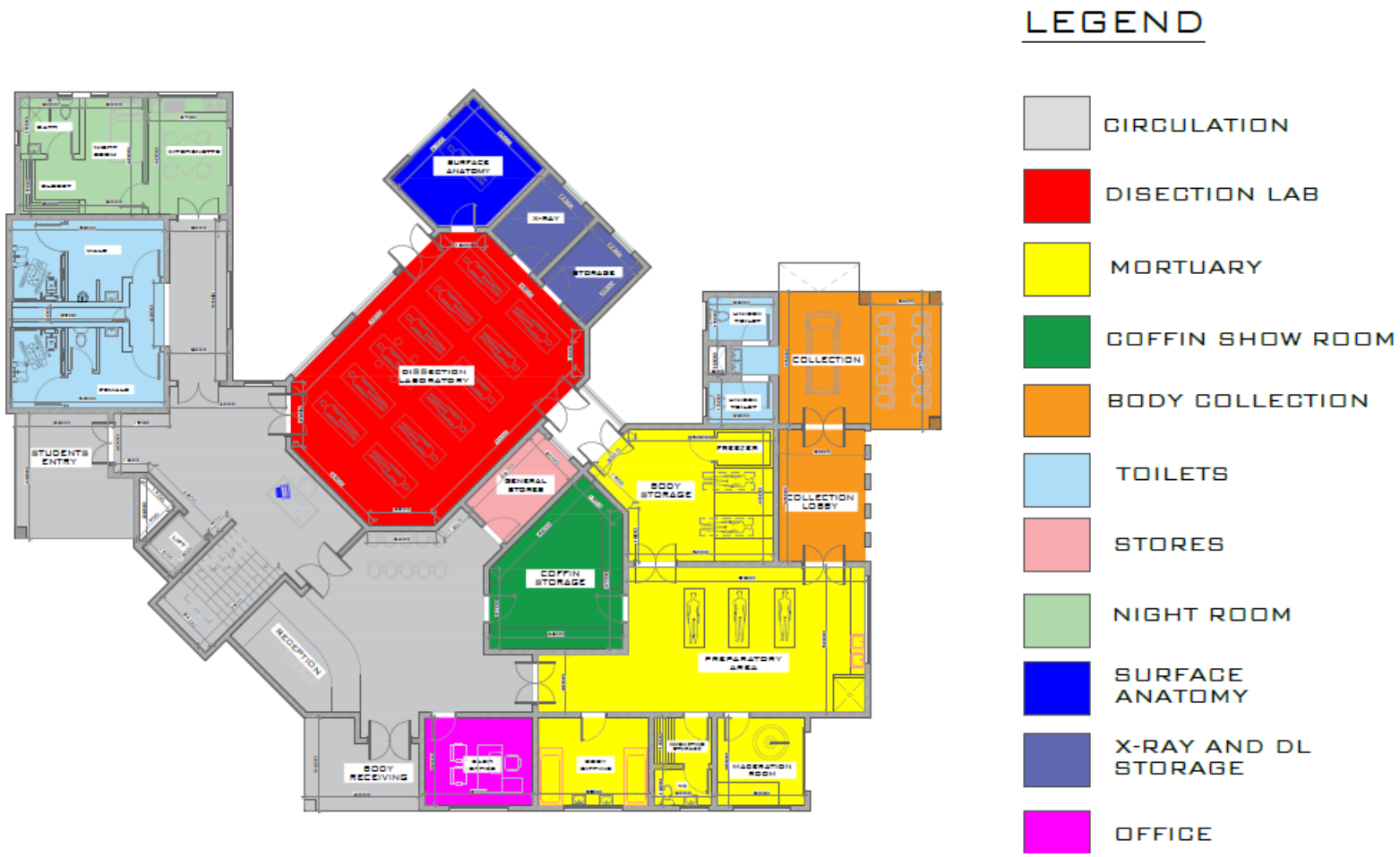


Figure 2- 4: Ground Floor plan of an Anatomy Laboratory

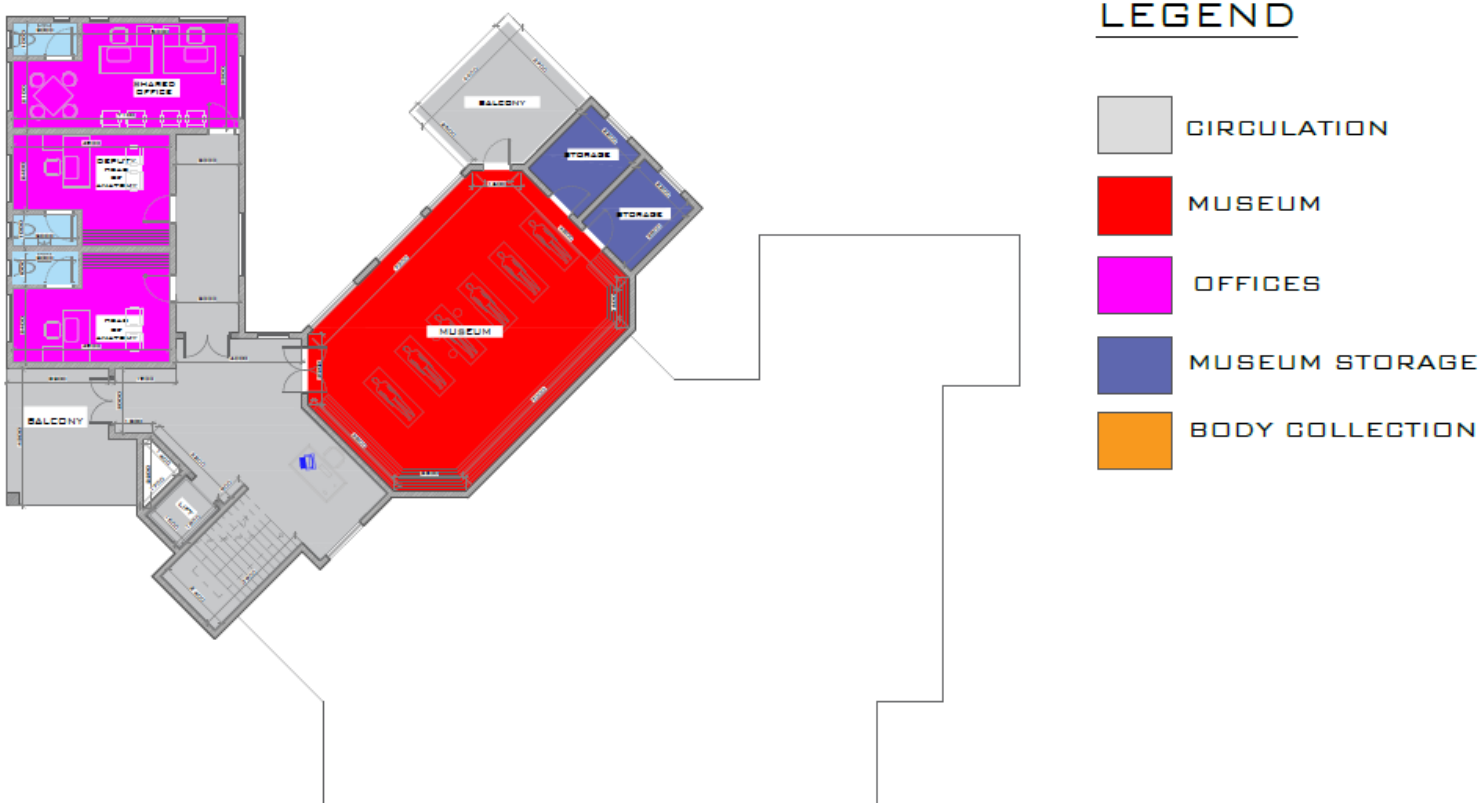


Figure 2- 5: First Floor plan of an Anatomy Laboratory

2.2 Main Activities of the Project

The project implementation cycle is categorised into the planning, design, construction, operation, and decommissioning phases. The main activities carried out during these phases are highlighted in subsequent sections.

2.2.1 Planning and Design Phase

This phase includes planning and designing of the project works and activities. This includes land surveying, technical feasibility studies, environmental and social assessment studies, preparation of technical drawings, construction designs, processing of applicable authorisation and approvals from relevant authorities, preliminary consultations, and land use planning resource mobilisation and tendering of the works. The preparation for the construction phase involves the following steps:

- ***Environmental and Social Assessment:*** This involves the development of the ESMP which has informed the design of the project.
- ***Soils and Materials Investigation***: This study aims to obtain information on the physical properties of subsurface soil and rock around a site for engineering purposes, such as bearing capacity for the design of foundations for proposed structures, determination of the suitability of the soils for backfill and construction purposes, and repair of distress to earthworks and structures caused by subsurface conditions.
- ***Architectural and Engineering Designs***: This task involves preparation of detailed architectural drawings; preparation of detailed structural engineering drawings; preparation of detailed services drawings inclusive of water, power, lighting, and wastewater; preparation of detailed civil engineering drawings for storm water, access roads and carparks, and other ancillary facilities. Preparation of Architectural drawings to fit the proposed concepts. Engineering drawings shall be created by civil, structural, and electro-mechanical service engineers.
- ***Identification of material sources***: The aim of this task is to identify suitable sites for materials, for example, borrowing gravels, sand, quarry for construction purposes of foundations, access roads, and car parks, and to identify licenced suppliers for aggregates used in the concrete.

2.2.1.1 Project Design Considerations

The project is being designed by AWW Limited. Upon consultation, the team came up with an environmentally friendly design as follows.

a) **Ventilation:** The design caters for natural ventilation with features that encourage natural air circulation (including the use of permanent air vents above all doors and windows).

b) **Lighting**: The design caters to various types of energy-efficient luminaries, including fluorescent lamps and natural lighting through glass windows and doors, as appropriate for both security and lighting.

c) **Sustainable resource use:** The design of the development incorporates landscaped gardens, which will be planted with suitable species of trees, shrubs, and grass to prevent ecological deterioration and improve the aesthetic value of the site. Part of the excavated soil will be used for landscaping, thereby reducing the amount of soil to be transported away from the site.

d) **Fire protection**: The design of the proposed developments incorporates fire- fighting equipment to be installed in each building.

e) **Building resilience to heat waves:** Climate change affects temperature patterns worldwide, particularly in Malawi, which at times results in heat waves. The design of the proposed facility should consider resilience to heat waves and other heat effects.

f) **Building resilience to cyclones and strong winds:** Climate change affects temperature patterns worldwide, particularly in Malawi, which at times results in strong winds, storms, and cyclones. The design of the proposed facility should take into consideration resilience to strong winds, storms, and cyclones.

g) **Universal Access structures:** The facility was designed to provide access to all students and staff, including those with disabilities, by providing two lifts and a ramp with slopes of not more than 1:10. The surface will be designed to be non-slippery to prevent any trips and falls; and

h) **Earthquake resistant:** KUHeS does not experience earthquakes, but experiences tremors. This is because the campus is not directly situated in the East African Rift Valley, which is prone to earthquake. The design of the structure has taken into consideration the requirements to withstand extreme tremors previously experiences in Lilongwe, which, in most cases, are not very devastating.

2.2.2 Construction Phase

The main activities undertaken during this phase of the project are clearing and constructing the proposed building structure within the project sites. During this period, there is a need for continued consultation with the stakeholders around the project. Standard precautions for environmental health and safety procedures should be considered. The Contractor must ensure that standard precautions for safety procedures are taken into consideration to prevent accidents and spillages of oils and other toxic substances. The Contractor will have to prepare contingency plans to contain and treat accidental spillages which will be adhered to and monitored.

The Contractor (s) to be engaged will be required to submit a Contractors Environmental and Social Management Plan for approval before the start of work that will include the following sub-management plans:

- Health and Safety Plan that will also include an Emergency.
- Preparedness and Response Plan
- Emergency preparedness and response plan;
- Traffic Management Plan
- Labour influx management plan
- Storm Water Management Plan
- Code of Conduct for Contractors Workers together with a training and awareness plan
- Sexual Harassment Prevention and Response Plan
- Grievance Redress Mechanism

The following are the key activities which will be undertaken:

- *Concrete Mixing* – Concrete production will be achieved by using cement, fine aggregate, coarse aggregate, and additives such as retarders or plasticisers based on the targeted mix design. The cement shall be sourced from reputable suppliers, and the aggregate shall be sourced from approved quarry sites subject to compliance with laboratory testing standards. Mixing water be subjected to international standards for compliance testing and should be used where appropriate. The effect of the mixing water temperature on the concrete temperature should not be ignored. The water mixture used in concrete production is checked to determine whether it contains organic ingredients. Checks with the naked eye are always performed without being tied to a specific time interval. Additionally, the water used in concrete production quality control monitoring and acceptance criteria should be based on relevant international standards. Construction water will be sourced from the Lilongwe River. The activity will involve both manual labour (for connecting water bowser to water source) and the use of machinery.

- *Concrete pumping*: When pumps are used, the end of the supply pipe will be maintained at an elevation that will allow a maximum of one-meter free fall of concrete. The mortar and water used for the concrete pump, to make pipes suitable for pumping concrete properly, must be removed from the formworks. Incidences of contamination of the concrete with oils shall be monitored. The activity will mainly involve use of machinery.

- *Earthworks (site clearance)* - This shall be done using a motor grader, dozer or an excavator. This ensures that the drainage pattern of the site does not interfere with construction activities. The activity will involve both manual labour and use of machinery.

- *Foundations excavation*: Most of the site is covered by vegetation. The same will be removed and disposed of by a licenced waste handler to pave the way for further construction. Top-soils

will be stock piled and stored within the project sites for reuse during site restoration. The activity will involve both manual labour and use of machinery.

- *Material transportation* - Materials (fine and coarse aggregates) from quarries will be transported by tipper trucks to the construction site. Water for construction and dust suppression will be brought to the site by water bowsers, particularly from approved and licenced sources (mainly from Lilongwe River). Other materials such as cement, timber, and reinforcement bars will be transported by trucks to the construction site. These tracks shall be covered to prevent pollution or drops. The activity will involve both manual labour and use of machinery.

- *Material Storage*: Materials such as aggregates, and sand will be stored in specific areas near construction sites and designated for materials storage. The site for material storage was already allocated to the project activities and will be part of the site handed over to the contractor located south of the proposed construction site. Cement and reinforcement bars will be stored in special storage rooms. Timber will be used directly in the required areas, and consequently, there will be no stockpiling of timber. The activity will involve both manual labour and use of machinery.

- *Masonry, Concrete works, and related activities* - The construction of building walls, foundations, floors, pavements, drainage systems, access roads, and parking areas, among other components of the project, will involve a lot of masonry work and related activities. General masonry and related activities will include stone shaping, concrete mixing, plastering, slab construction, construction of foundations, erection of building walls, and curing fresh concrete surfaces. These activities are known to be labour-intensive and will be supplemented by machinery, such as concrete mixers. The activity will involve both manual labour and use of machinery.

- *Steel Structure Works*: Buildings will be reinforced with structural steel for stability. The structural steelwork involves steel cutting, welding, and erection. The activity mainly involves manual labour.

- *Roofing and Sheet Metal Works* - Roofing activities will include sheet metal cutting, raising roofing materials such as clay roofing tiles and structural timber, and fastening the roofing materials to the roof. The activity will involve both manual labour and use of machinery.

- *Electrical Work* - Electrical work during the construction of the premises will include the installation of electrical equipment and appliances, including electrical cables, lighting apparatus, and power sockets. In addition, there will be other activities involving the use of electricity, such as welding and metal cutting. The activity will mainly involve manual labour.

- *Plumbing* - Installation of pipework for water supply and distribution will be conducted within all units and associated facilities. Similarly, pipework for wastewater sewer pipes will be installed within all units and associated facilities. In addition, pipework will be done to connect sewage from the premises to the sewer line. The activity will mainly involve manual labour.

- *Landscaping*: Improvement to the aesthetic value or visual quality of the site will be done once construction ceases, and the contractor will carry out landscaping as part of the landscaping works This will include the establishment of flower gardens and lush grass lawns where applicable and will involve replenishment of the topsoil. It is noteworthy that the developer will use plant species that are available locally preferably indigenous for landscaping. The activity will involve both manual labour and use of machinery.

2.2.2.3 Construction Material

The project will require various standard construction materials including gravel, aggregates, cement, timber, steel, bitumen, and water. Aggregates were obtained from existing quarry sites known by Contractor. Bitumen will be sourced by the Contractor from local suppliers and will be used for the construction of access roads within the campus. Interior materials with low Volatile Organic Compound (VOC) emissions will be selected. Gravel (for compaction of floor area) will be a source of open borrow pits, and wide valleys are the sources of sand. The sites for sand mining have not been determined, but once they are identified, appropriate environmental assessment will have to be conducted, and necessary approvals will be obtained.

A summary of all the construction materials is provided in Table 2-2., which also shows the anticipated wastes from these works.

Table 2- 2: Summary of construction materials

Area of Construction	Construction Material/Input	Anticipated Waste
Buildings Construction		
All walls and Floors	• Reinforced Concrete • Masonry and Plasters Walls • Insulated Glazed Curtain wall systems	Stone cuttings from block shaping, dust and undersized/broken stones.
Slabs, beams, and columns	• Reinforced Concrete • Steel	Wastewater, used cement bags, excess oils, steel off cuts
Formwork, roof support, doors, wardrobes, and cabinets	• Plywood formwork • Hollow metal doors and / or lazed alum framed doors	Used formwork, broken timber, sawdust, spoilt fixings, and fittings

Area of Construction	Construction Material/Input	Anticipated Waste
Windows	• Insulated double-glazed curtain wall system	Broken glass and timber off cuts
Finishing and interiors	• Floor and ceramic tiles	Paint containers, waste paint, wastewater, waste thinner, broken tiles, veneer
Earth compaction and slab works	• Gravel	Unused stockpiled gravel materials
Road construction, foundations, decking	• Aggregates	Unused stockpiled Aggregate materials
General Construction	• Cement	Concrete rubble
Roofing, reinforcements	• Timber	Un used timber and timber cut offs
Reinforcements	• Steel	Steel cut offs
General Construction	• Water	Waste water
Bitumen Access Road Construction		
Access Road	• Concrete paving • Asphalt pavement	Wastewater, used cement bags, excess oils, steel off cuts and asphalt waste

2.2.2.4 Construction equipment

A summary of the construction equipment for the construction phase is provided in Table 2-3.

Table 2- 3: Construction equipment required

Construction materials	Functions that the materials will perform
Bull Dozers for clearing the site	Removal of top soil and vegetation materials, and pushing out stumps
Graders	Grading and levelling land for buildings and access road formation
Tippers/lorries	Transporting construction materials and workers
Light and heavy rollers	Compaction
Front end loader	Loading materials onto tippers and lorries
Light equipment i.e wheel burrows, shovels, picks	Different construction activities
Concrete mixers	Mixing concrete
Earth mover	Removing earth materials
Compactor	Compacting the soils
Excavator	Excavation

2.2.2.5 Demobilisation Phase

Demobilisation of temporary structures will be performed for proper restoration of the site. Other activities include rehabilitation of the workshop and stockpile yard, at least to the original

condition, clearance of all types of wastes including used oil, and solid wastes (plastics, wood, metal, papers, decommissioning of septic tank etc.). Deposit all waste to the authorised dumpsite and terminate temporary employment. The demobilisation of temporary structures will result mainly in solid waste such as timber, iron sheets, septic tanks (only in cases where contractor will use septic table for temporary liquid waste management) and rubble from demolitions. Timber and metal sheets will be sold to people in nearby communities for reuse, whereas rubble will be used in backfilling gullies or borrow pits that require rehabilitation, which will be guided by the Lilongwe City Council.

2.2.3 Operation and Maintenance Phase

After the finalisation of construction works, it is expected that learners will be using these facilities. Learners will benefit from modern equipment and materials which will be installed and used at the University for learning purposes. The operation activities will mainly involve the provision of a good learning environment for learners with good sanitary facilities and good welfare services for learners so that they have a conducive learning environment through the provision of modern learning structures and equipment.

2.2.3.1 Potable Water Source and Water Quality Management

In terms of the calculation of the volume of portable water required, it was assumed as shown in the equation below, and the results are shown in Table 2-4.

$$\textit{Number of People Estimated} \times \textit{Water Consumption Rate (Liters/capita/day)} \times \textit{\% Population per day} = \textit{Estimated portable water } (m^3/day)$$

Approximately 24 cubic meters of water is required per day for portable water (which is connected to the Lilongwe Water Board and is used for consumption and other uses). The proposed water source is the Lilongwe Region Water Board. During the construction phase, the project is expected to require at least 12 cubic metres of portable water per day.

Table 2- 4: Water requirements

SN	Facility	Number of people (maximum possible capacity)	Estimated Water Consumption (Liters / capita / day)	Percentage of population that will use Water	Estimated water Demand (m^3/day)
1	ODeL Facility	1200	100	20	24
2	Construction phase	120	100	100	12

2.2.3.2 Waste Management During Operation Phase

During operational phase only domestic wastes are expected which includes solid wastes and Wastewater. Domestic waste includes liquid waste and refuse.

2.2.3.2.1 Solid Wastes

Solid wastes, such as paper, cardboard, tin, glass, and food wastes, are expected during the operational phase. Collection at the site is the responsibility of the Contractor. Waste skips shall be provided at strategic areas within the premises to collect all waste from the project site. In terms of the calculation of the volume of solid waste to be generated, it has been assumed, as shown in the equation below, and the results are shown in table 2-5.

Number of People Estimated × Solid Waste Generation Rate (kg/capita/day) × % Population to Generate Waste = *Estimated Solid Water (kg/day)*

Approximately 300 kg/day of solid waste is produced by the facility, and 42 kg/day is expected to be produced per day during the construction phase.

Table 2- 5: Estimated solid waste to be produced

SN	Facility	Number of people (maximum possible capacity)	Generation Rate (kg/capita/day)	Percent of population to generate waste	Estimated Solid Waste (kg/day)
1	ODeL Facility	1200	0.5	50	300
2	Construction phase	120	0.5	70	42

Source: Consultant Analysis, 2024

2.2.3.2.2 Liquid Wastes

All the liquid waste from the ODeL block will be collected and directed to the sewer line. In terms of the calculation of the volume of liquid waste to be generated, it has been assumed, as shown in the equation below, and the results are shown in table 2-6.

Number of People Estimated × Water Consumption Rate (Liters/capita/day) × % Consumed to become wastewater × % Population that will Use Toilets = *Estimated Wastewater (m^3/day)*

Table 2- 6: Estimated wastewater from the facilities

SN	Facility	Number of people (maximum possible capacity)	Estimated Water Consumption (Litres / capita / day)	Percentage consumed to become wastewater	percent of population that will use toilets	Estimated wastewater (m^3/day)
1	ODeL Facility	150	130	60	40	4.6
2	Construction Phase	120	130	60	70	6.5

Source: Consultant Analysis, 2024

2.2.3.2.3 Storm water Management

The proposed project generates stormwater that requires immediate handling. The project will construct drainage structures that direct water to natural water. Rainwater harvesting technology should be considered for the facilities and used for watering the lawns and flowers surrounding the facilities. Currently, there is no reliable storm water management system existing on the project sites, as the existing drainage system was constructed to manage the capacity of old buildings and it is in a bad state. Hence, a new drainage system will be required to be developed under the project.

2.3 Water Supply

The project area is connected to the Lilongwe Water Board Water supply system. Therefore, the Contractor will apply for the temporary water connection during the construction phase. During the operation phase, the project will be connected to the existing water supply from the Lilongwe Water Board. Water for construction purposes will be sourced from the Lilongwe River, and the Contractor will apply for the water abstraction permit from the national water resources authority.

2.4 Energy Requirements

The project area is connected to ESCOM power supply. Therefore, the Contractor will apply for the temporary electivity connection during the construction phase. During the operation phase, the project will be connected to the ESCOM's main power supply.

2.5 Labour Management

The proposed project is expected to create job opportunities in the project area. This may be a training ground for local people who may not have been employed elsewhere. It is recommended that the local pool of labour be used. For some of the less complex tasks, local unskilled labour should be given short-term contracts and job training. For work that can be done using human labour, the use of machinery will be discouraged. To ensure that local people are being employed, the Lilongwe District Labour Office will be involved in the recruitment of workers. The project employs at least 120 people during the construction phase. During the operation, the project is expected to employ no fewer than 20 people who will be working directly within the project areas. The project shall ensure that there is at least a 60% representation of the gender category.

2.6 Source of Sand for Construction

There is a need to take extra care when sourcing raw materials, especially sand, for construction work. The project will obtain written approval from the District Council, where sand is to be extracted. The local council, through the Environmental District Office, will also guide the project on any required permits or licences they are to obtain.

2.2.4 Decommissioning Phase

It is not envisaged that the University will cease being offered at a certain point in time. Since, the time frame is unknown, and practically a long period of time to come, it might not be practical to predict what will happen during that time. However, in cases where there has to be abandonment or partial replacement of sections, this report recommends that a decommissioning plan, including an environmental and social management plan, be prepared when the time comes.

Chapter Three: Legal Framework

This chapter provides a review of the legal framework relevant to the proposed project and outlines its potential impacts. It also references key legislation. Additionally, the chapter offers an account of all regulatory licences and approvals necessary for the proposed project to align with environmentally sound management practices and comply with pertinent existing legislation.

3 1 Relevant Malawi Policies and Legislation

Malawi, as a signatory to the 1992 Rio Declaration on Environment and Development, is committed to Principle 17 of the declaration, which mandates the country to conduct environmental impact assessments as a national instrument for environmental management. These assessments were carried out following a decision by a competent authority for all proposed activities that are likely to have a significant adverse impact on the environment. After this declaration, numerous policies and legislation concerning environmental management have been developed, with the overarching legislation being the EMA of 2017. The Malawi Guidelines for Environmental Impact Assessment were established in 1997.The proposed project is aligned with various policies and legislation pertaining to water, land, the environment, gender, and other relevant areas. Consequently, the project is responsible for understanding and complying with the requirements stipulated in all pertinent sectoral policies and legislation. This commitment aims to enhance sustainable environmental management and the responsible utilization of other resources. This section, therefore, provides an outline of the selected policies and legal frameworks directly relevant to the project.

3.1.1 National Environmental Policy (2004)

The overall policy goal of the Policy, under Section 2.1, is to promote sustainable social and economic development through sound management of the environment and natural resources. In Section 5.8, under mining, the section aims to ensure that the development of the country's mineral resources takes place within the framework of sustainable utilization of natural resources and management of the environment, and that the mining industry contributes to the country's economic growth and poverty reduction program. The policy guidelines aim to ensure that mining operations take place in an environmentally sustainable manner. This project acknowledges the need to incorporate sustainable environmental management practices into its implementation. It recognizes the direct relevance of the National Environment Policy (NEP) to its objectives, particularly in terms of facilitating sustainable resourcing of construction materials. For instance, the utilizations of rock aggregates in construction can serve as a sustainable alternative to sand mining, which often occurs in an unsustainable manner along riverbanks, leading to water quality degradation. Therefore, the project will ensure that the policy adheres to by adopting sustainable construction methods and sourcing materials.

3.1.2 The National Gender Policy (2015)

Gender mainstreaming into socioeconomic development plans is recognized as one of the essential factors for achieving sustainable development globally. Both the Malawi Growth and

Development Strategy III (MGDS III) and the Millennium Development Goals (MDGs) acknowledge the significance of gender and women's empowerment in socio-economic development.

As outlined in Section 1.3, the National Gender Policy provides guidelines for incorporating gender considerations into various sectors of the economy to reduce gender inequalities, promote the participation of women, men, and youth, work towards sustainable and equitable development, and eradicate poverty in the country. In line with Section 3.6, the persistence of gender inequalities and the under-representation of women in decision-making positions at all levels necessitated the development and implementation of gender policy to address these gender imbalances and related issues. The proposed project aims to empower women economically to increase their household income, ultimately leading to poverty reduction. Increasing women's labour force participation, productivity, and earnings directly impact poverty reduction and stimulate economic growth and development.

Section 3.7 of the policy recognises that Gender-Based Violence (GBV), especially violence against women, girls, and vulnerable groups, severely hinders social well-being and poverty reduction. Therefore, the eradication of Gender-Based Violence is crucial for national development. The proposed project will establish plans to prevent GBV within the workplace area. Project implementation prioritises the integration of gender-related considerations, ensuring that both positive and negative impacts on women and girls are effectively addressed and minimised, respectively.

3.1.3 The National Climate Change Policy (2016)

The Malawi National Climate Change Policy was developed by the government to recognise the country's high vulnerability to the effects of climate change. Its primary goal is to promote climate change adaptation and mitigation to enhance the livelihoods of the population, while also considering economic development that significantly reduces environmental risks and ecological scarcities. One of the specific objectives of this policy is to manage the impact of climate change through interventions that enhance and sustain the social and ecological resilience of Malawians. Additionally, the Malawi National Climate Change Policy aims to contribute to stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human-induced interference with the climate while ensuring sustainable social, economic, and environmental development. The proposed project must adhere to the requirements of policies promoting the reduction of environmental risks and ecological scarcity. This entails designing and implementing activities that prioritise environmental sustainability. For instance, the project will utilise environmentally friendly construction materials, such as tents and grasses, for shelter construction, avoiding the use of burnt bricks.

3.1.4 National Sanitation Policy (2012)

The National Sanitation Policy provides a broad framework and policy guidelines to enhance and support sanitation coverage in the country by formulating sanitation strategies, plans, and programs at all levels to improve the quality of life of the people of Malawi and the physical environment necessary for health. The primary focus of the policy is on the safe disposal of excreta away from dwelling units and workplaces by using sanitary latrines and includes the creation of an open defaecation-free environment along with the safe disposal of liquid and solid wastes and the promotion of health and hygiene practices in the country.

For any social and economic development to take place, adequate sanitation, in conjunction with good hygiene and safe water, is essential. The lack of clean water and poor sanitation cause many diseases and their spread. It is estimated that inadequate sanitation is responsible for 4.0% of deaths and 5.7% of disease burden worldwide. Several studies have also shown that improvements in drinking water and sanitation (WASH) lead to decreased risks of waterborne diseases such as diarrhoea. Such improvements might include the use of water filters and provision of high-quality piped water and sewer connections.

As such, the proposed project will ensure that liquid and solid waste management encourages the reduction, recycling, and reuse of waste before final disposal, thus complying with the provisions of the policy.

3.1.5 National HIV and AIDS Policy (2005)

The goal of this policy, as stated in Section 1.3, is to prevent Human Immunodeficiency Virus (HIV) infections; reduce vulnerability to HIV; improve the provision of treatment, care, and support for people living with HIV and Acquired Immune Deficiency Syndrome (AIDS); and mitigate the socio-economic impact of HIV and AIDS on individuals, families, communities, and the nation. Chapter 7 focuses on responding to HIV and AIDS in the workplace. Section 7.1 points out that the impact of HIV and AIDS in the workplace is increasingly felt. Among other factors, absenteeism and death result in low productivity, the premature payment of employee benefits, and low workplace morale. The section also mentions that discrimination against people living with AIDS has been perpetuated through practices such as pre-employment HIV testing, dismissal because of being HIV-positive, and the denial of employee benefits if known to be infected. The proposed project will endeavour to reduce and manage the impact of HIV and AIDS in the workplace through the implementation of an HIV and AIDS policy and a prevention, treatment, care, and support program. Furthermore, the proposed project shall ensure that no person undergoes testing for HIV as a precondition for employment, and no person shall be denied employment solely based on HIV serostatus. The management shall not force its employees to disclose their HIV, but where an employee chooses to voluntarily disclose his or her HIV serostatus to management or to another employee, such information shall not be disclosed to others without that employee's written consent.

3.1.6 National Construction Industry Policy (2015)

Renovation (construction activities) of targeted facilities triggers the Construction Industry Policy, whose broad policy goal is to develop an internationally competitive construction industry that will be able to undertake most construction projects in Malawi. The Policy also aims to export services and products, ensure value for money to industry clients, and promote environmental sustainability in the implementation of construction projects. This policy specifies the construction materials and designs of buildings to ensure sustainability. Issues regarding the safety and health of construction workers are also emphasized in this policy.

Project implementers must:

- Prioritize awarding construction contracts to qualified and registered Malawian Construction Companies in a bid to help increase participation of local construction players in local and international markets.
- Ensure that the Contractor protects and harnesses the environment in line with national and international policies for environmental sustainability.
- Ensure designs promote safety and more sustainable buildings both in construction and especially in their operation phase.
- Ensure construction workers are provided with suitable and adequate PPE

3.1.7 The National Water Policy (2005)

Section 1.3 of the National Water Policy explains that this policy provides an enabling framework for integrated water resource management in Malawi. The section points out that after realising the challenges, threats, and opportunities associated with the implementation of activities in the water and sanitation sector, the GoM through the Ministry responsible for Water Development established a policy tailored to tackle any issues in the sector in an integrated manner through the involvement of all concerned stakeholders, including communities.

The Policy comprehensively covers areas of water resource management and development, water quality and pollution control, and water utilisation. In Section 3.4.15, it is set that all water facilities shall be registered using a numbering system developed and adopted by the Ministry responsible for Water Affairs. In Section 3.4.9, the policy stresses that pollution control of water resources shall adopt the 'Polluter–Pays' principle to ensure water user responsibility. Section 5 of the policy also points out that surface and ground water quality have been negatively affected by environmental degradation, among other factors. The proposed construction of the OdeL facility will promote the strategies stipulated in the policy, with specific effort placed on the following strategies:

- Section 5.2.2 - Ensuring and promoting the proper management and disposal of waste
- Section 5.2.5 - Promoting public awareness on guidelines and standards on water quality, public health and hygiene and pollution control mechanisms; and
- Section 5.2.6. Strengthening institutional arrangements for environmental management.

3.1.8 The Malawi State of Environment and Outlook Report (2010)

The State of the Environment and Outlook Report (SEOR) acknowledges that despite efforts in environmental management, the degradation of natural resources remains a significant threat to the social and economic development of Malawi. The high population density and heavy dependence on agricultural production have led to alarming rates of environmental degradation. This has resulted in deforestation, declining soil fertility, increased erosion, water depletion, loss of biodiversity, and increased pollution.

In Section 2.3.3, waste management challenges in Malawi are identified. As population density and the pace of urbanisation continue to increase, waste management presents an escalating challenge. In the future, waste management is expected to become more complex and costly for both government and residents. Various types of non-decomposable waste are generated, and if not properly managed, they have a detrimental impact on the aesthetic value of the environment and contribute to long-term pollution. Improper waste disposal can lead to both human and environmental health problems. The proposed project considered the challenge of waste management by including a waste recycling room. This space is designed to facilitate waste reduction, recycling, and proper disposal practices, all of which aim to mitigate waste accumulation. Through the implementation of this facility, the project aims to ensure that waste is managed in a manner that minimises environmental impacts and contributes to sustainability efforts.

3.1.9 National Environmental Action Plan (2002)

The National Environment Action Plan (NEAP) of 2002 is a reference guide for integrating environmental considerations into development planning. It presents an environmental protection and management plan that defines the roles and responsibilities of various actors (including local communities, the government, and line ministries) in environmental management. To protect the environment from further degradation, the NEAP sets out actions that need to be considered to guarantee adequate environmental protection. The NEAP in section 3.2 explains that the nexus of population growth, poverty, and illiteracy has led to suboptimal and unsustainable resource utilisation. The poor, being the most affected, have heavily discounted future incomes and pursue suboptimal social consumption decisions, leading to environmental degradation. This nexus and its negative implications for the development of the country represent enormous challenges that the government is trying to address. The proposed plant responds to these challenges by providing a means for poverty alleviation through various options such as employment and emphasis on providing a conducive learning environment for learners, including welfare provisions such as modern facilities and equipment, which may indirectly contribute to addressing the challenges of poverty and illiteracy rates.

3.1.10 HIV and AIDS Policy, 2012

The Policy highlights that the impacts of HIV and AIDS on the country are quite significant and affect a range of socioeconomic activities. HIV and AIDS prevalence in the country varies from one district to another, and from rural to urban areas. The highest rate is in the Southern Region and the lowest rate is in the Northern Region. The prevalence rate is higher in urban areas than in rural areas.

The Policy identifies migrant workers and women as highly vulnerable to the transmission of HIV, AIDS, and other sexually transmitted diseases. In addition, increased disposable income from migrant workers may encourage some workers to indulge in extra-marital affairs within the surrounding villages, which will enhance the spread of HIV and AIDS among workers and local people. The project will have the potential to increase the number of people in the project area owing to an increase in the number of temporary workers who will be employed to work at the project. This is likely to cause the spread of HIV and AIDS. As a way of implementing the Malawi National HIV and AIDS policy, the proponent will implement an HIV and AIDS workplace policy and prevention, treatment, care, support, and impact mitigation programs to effectively prevent, reduce, and manage the impact of HIV and AIDS in the workplace. It is also proposed that during the construction and implementation phases of the project, workers, as well as surrounding communities, should be sensitised to the prevention of HIV and AIDS. Furthermore, Information, Education and Communication (IEC) materials for HIV and AIDS should be distributed.

3.1.11 National Educational Policy, 2020

The National Education Policy (NEP) is the Government of Malawi's document that spells out the government policy on education. It outlines the sector's priorities and defines the country's education policies to guide the development of the education sector in Malawi. The Government recognises that education is the backbone for socio-economic development, economic growth, and a major source of economic empowerment for all people, especially women, youth, and the physically challenged. It also has a strong impact on literacy, behaviour in terms of reproductive, maternal, and child health, and knowledge of HIV and AIDS. The policy also subscribes to the Sector Wide Approach (SWAp) to develop, plan, and finance the education sector in line with the Malawi Development Assistance Strategy and Sector Working Group Guidelines. The NEP is designed to respond to Malawi Growth and Development Strategy II and various related national regional and international policies and protocols on education. The policy recognises that early childhood development, education, and primary and secondary education are critical foundations for further education. It further recognises the importance of the inclusion of special needs education, out-of-school youth education (complementary basic education), and adult literacy in the education sector. The NEP attempts to define the provision of quality education holistically through expanded access and equity, improved quality and relevance, and improved governance and management. Furthermore, the NEP recognises the government's commitment to related international protocols, such as Education for All Jomtien (1990), Millennium

Development Goals (2000), and Sustainable Development Goals (2015) which recognise the importance of making education available to all. It is therefore expected that the coming together of all key players in the education sector will make a significant difference in and to Malawi and thereby respond to national and international aspirations and expectations. By building an educated and highly skilled population, Malawi will not only achieve accelerated economic growth and development but will also aim to achieve the Sustainable Development Goals. The Government is committed to spearheading the implementation of specific strategies and focused actions to ensure that the NEP becomes the centre of the education sector.

The project is in line with the policy, as it aims to increase the annual intake of students and train high-level human resources that can meet the development needs of the country and the international labour market.

3.1.12 National Construction Industry Policy, 2017

The construction of the proposed undergraduate teaching complex will trigger the Construction Industry Policy in that the project developer must ensure that the Contractor protects the environment in line with national and international policies for environmental sustainability. Areas of focus included occupational health and welfare, gender, and HIV and AIDS. Section 3.7 part (a) of the policy recognises that the Construction Industry significantly contributes to deforestation, noise, dust and chemical pollution, soil erosion, and physical disruption. In addition, there have been several abandoned quarry sites that have been left without being rehabilitated and bitumen waste dumped carelessly in road projects. Some of these result in the pollution of rivers and the annihilation of aquatic life. While Environmental Impact Assessment is mandatory for certain projects, there are no mechanisms for effective reinforcement. To this effect, the policy ensures that the Construction Industry protects and harnesses the environment in line with national and international policies.

Furthermore, the developer will ensure that only qualified and registered Contractors with the National Construction Industry Council (NCIC) will be considered for the project's work contracts to ensure that standard structures and standard procedures are followed which will ensure that only durable structures are constructed in an environmentally and socially sustainable manner.

3.1.13 Malawi National Land Policy (2002)

The intent of the National Land Policy (2002), as indicated in Section 1.4, is to guide the management of land in Malawi and to promote the optimal utilisation of the country's land resources for sustainable socio-economic development. Due to the recognition that land is a basic resource common to all people in Malawi, the policy in section 5 provides procedures aimed at protecting and regulating tenure rights, land-based investments, and developments at all societal levels. Some of the objectives of the policy include the promotion of land tenure practices that guarantee security and fairness for any land resource owned by communities.

Section 9 of the policy recognises that concern over Malawi's environment is not necessarily a recent phenomenon. In Section 9.1.1, it is stated that the policy lends support to the policies and strategies currently in place and refers to specific attitudes and practices that adversely impact land-based resource management. In section 9.1.2, the policy recognises that the management of solid waste in the country is poor; it highlights that the burning and burying of refuse, which is most common in rural areas and small towns, is unsuitable for high-density residential areas or commercial zones.

In response to the concerns highlighted in the policy, the proposed project will protect land resources by adopting recommendations from the policy, which are highlighted in Section 9 as follows:

- KUHeS will ensure that its environments are kept clean and that the polluting effects of refuse do not endanger the health of residents and the environment; and
- KUHeS will work closely with the relevant stakeholders to manage waste and other emissions. Regulations for the control, collection, transportation, and disposal of all hazardous refuse provided in the Environment Management Act shall comply with the affirmation of this land policy.

3.1.14 National Energy Policy (2008)

The Government of Malawi (GoM) realises that the industrial and socio-economic development of the country depends on access to modern, reliable, and sufficient energy. This highlights the challenges faced in the energy sector, such as unreliable power supply, low generation capacity, and over-dependence on biomass. Policy priority area 8 emphasises the need for demand-side management, which is an important means of improving energy efficiency at the end-use level of the energy supply chain. Currently, in Malawi, there is a lot of waste of electrical energy and biomass in end-use activities such as cooking, water and space heating, and lighting occasioned using inefficient appliances and devices. This priority area focuses on saving electricity and biomass consumption. The proposed project will instal energy-efficient measures to help reduce its electricity consumption, bills, and stress on overburdened utility systems. The proposed project will discourage the use of biomass energy such as charcoal and firewood which are the main drivers of deforestation in Malawi. Where this is not possible, the project will promote the use of energy-efficient cooking stoves. The charcoal business and its use in any operation are strictly prohibited.

3.2 Relevant Malawi Legislation Framework

3.2.1 Constitution of the Republic of Malawi, 1995

The Constitution of the Republic of Malawi is the Supreme Law of Land. Any statute inconsistent with the Constitution is rendered invalid. Section 13(d) of the Principles of National Policy, the Malawi constitution, recognises the crucial role which the environment and natural resources play in sustaining human livelihood and emphasises the need for managing the environment responsibly through the following:

- Preventing the degradation of the environment.
- Providing a healthy living and working environment for the people of Malawi; and
- According to full recognition of the rights of future generations by means of environmental protection and sustainable development of natural resources and conserving and enhancing the biological diversity of Malawi.

This implies that, in facilitating the proposed project in selected districts, the proponent is obliged to satisfy all constitutional provisions.

3.2.2 Environmental Management Act (2017)

The Environment Management Act of 2017 in Malawi is the primary legislation governing the protection and management of the environment and sustainable use of natural resources. This Act establishes the Malawi Environment Protection Authority (MEPA) as the key agency responsible for environmental protection and management. MEPA has the authority to review and approve Environmental and Social Impact Assessments (ESIA) and other relevant environmental assessments.

Key sections of the Act relevant to ESIA and the associated Environmental and Social Management Plan (ESMP) include the following.

- Section 7: This section establishes MEPA as the principal agency responsible for environmental protection and sustainable resource utilizations. MEPA is empowered to review and approve ES, strategic environmental assessments, and other relevant environmental assessments, making it necessary to submit the ES to MEPA for approval.
- b) Section 9: It outlines MEPA's functions, which include developing strategies for environmental protection, facilitating cooperation between various stakeholders, and reviewing and approving environmental assessments in line with the Act.
- c) Section 31: This section outlines the requirements of ESIA. This prohibits the execution of projects that require an ESIA without the MEPA's written approval. If approval is granted, the project implementer must comply with specified conditions.
- d) Sections 99-104: These sections specify penalties for non-compliance with ESIA and other environmental matters. For instance, Section 99 prescribes a fine of ten million Kwacha and a ten-year imprisonment for contravening ESIA requirements. Section 102 imposes penalties for the improper management of hazardous substances, mislabelling of chemicals, or involvement in illegal trafficking, with fines of fifty million Kwacha and 15

years of imprisonment. Additionally, penalties for discharging pollutants into the environment and other offences were defined.

The ESMP has been prepared in accordance with the provisions of the 2017 Environment Management Act. The proposed project at KUHeS Lilongwe will adhere to the provisions of the Act.

3.2.3 Education Act (2013)

The Education Act of 2013, Part II, Section 5, highlights the promotion of education in Malawi and outlines the goals of education in the country. These goals include

i. Promotes national unity, patriotism, and a spirit of leadership and loyalty to the nation.
ii. Develop in the student, respect for the Constitution of Malawi, and principles of good governance.
iii. Inculcate in the student, acceptable moral and ethical behaviour.
iv. Develop in the student, an appreciation of one's culture and respect of other people's culture
v. Develop awareness of appropriate environmental resource utilisation and management practices in the student.
vi. Develop in the student, an appreciation of the impact of rapid population growth on the environment, and delivery of social services.
vii. Impart vocational and entrepreneurship skills in the student in order to raise personal income and improve living standards
viii. Develop in the student respect of practical work in order to stimulate industrial development;
ix. Promote equality in educational opportunities for all Malawians by identifying and removing barriers to achievement.
x. Develop the student knowledge, understanding, and skills needed by Malawians to compete successfully in the modern and ever-changing world.
xi. Develop in the student a spirit of inquiry, independent thinking and problem solving; and
xii. Promotes innovation and development of appropriate technologies.

The Act emphasizes the importance of developing the knowledge, understanding, and skills necessary for students to compete successfully in the ever-changing modern world.

The proposed project aims to contribute to the realization of these goals by constructing an OdeL teaching facility. Infrastructure development is expected to play a significant role in removing barriers to education and fostering a more equitable and conducive learning environment, ultimately aligning with the objectives outlined in the Education Act of 2013.

3.2.4 Monuments and Relics Act (1991)

The Act governs the management and administration of monuments and heritage sites in Malawi. Among other things, the provisions of the Act restrict unregulated development in protected areas. The Contractor will report to the Department of Antiquities on the discovery of objects of historic importance. The same department should be consulted prior to commencing excavation activities to seek guidance on the possibility of unearthing objects of
that nature. The primary objectives of this act are as follows:

1. To preserve and protect monuments, landmarks, and sites of cultural significance to safeguard the nation's rich heritage for the present and future generations.
2. To promote a sense of cultural identity and pride among communities, foster a deeper appreciation of their history and heritage.
3. Conserve and maintain architectural masterpieces and historical structures, ensuring their integrity and longevity for architectural appreciation and study.

Promote tourism and sustainable economic development as historic sites often attract visitors and generate revenue for local communities.

Chance Find Procedure for Cultural Resources:

1. Cease all activities in the vicinity of the discovery until a resolution for the preservation of artifacts is determined or guidance is obtained from relevant authorities.
2. Inform the foreman immediately upon discovery, who will then notify the Construction Manager and the Environment Officer/Environmental Manager.
3. Record details of the find in an Incident Report and capture photographs.
4. Define and secure the area of discovery to prevent damage or loss of movable objects. Arrange night guards for sites with removable antiquities or sensitive remains until local authorities take charge.
5. Preliminary Evaluation: Conduct a rapid assessment of the find by archaeologists to determine its significance based on criteria such as aesthetic, historic, scientific, social, and economic values.
6. Immediately record minor findings with minimal disruption to the construction schedule. Report all archaeological work results to the Ministry/Agency upon completion.
7. Notify the relevant Agency/Ministry within seven days of discovery as per heritage protection laws.
8. Provide the Heritage team with photographs and relevant information for the identification and significance assessment of heritage items.
9. The Ministry must investigate and respond within 2 weeks of notification
10. Responsible authorities decide on handling procedures that may include layout changes, conservation, preservation, restoration, or salvage.

11. Construction activities can only be recommended after receiving permission from the responsible authorities.
12. If no response is received within the 2-week period, authorisation is considered to resume construction activities.

The project will demonstrate its commitment to preserving cultural resources and complying with the Chance Find Procedure for the Monument and Relics Act.

3.2.5 Employment Act (2000)

The Malawi Employment Act (2000) establishes, reinforces and regulates minimum standards of employment with the purpose of ensuring equity necessary for enhancing industrial peace, accelerated economic growth and social justice and related matters. The Act provides guidance on how employees and employers can work together. The Act regulates the relationships between workers, managers, and owners to ensure that everyone is treated fairly and respectfully. The piece of legislation includes how and when an employee can work, what they should be paid, and the minimum conditions that are safe and appropriate to work in. The Act also determines when a person can be hired or fired and outlines the rights of employees and employers. The proponent is drawn to the following provisions that are relevant to the proposed development:

Fundamentally, the Act prohibits forced labour and all forms of discrimination, advances equal pay without distinction or discrimination of any kind, and entrusts the courts to provide remedies for the infringement of these fundamental rights.

Section 11 of the Act accords free access and assistance to a labour officer, meaning that the Contractor for the project should grant his employees every opportunity and necessary facilities for communicating freely with the District Labour Officer in the respective districts implementing the project, and when requested, afford every reasonable assistance to the to a Labour Officer. Wilful obstruction by a Labour Officer in the exercise of any of the powers conferred upon him by this Act constitutes a crime under the Act (Section 20). Section 12 prohibits the victimisation of employees pursuing their rights or anything accorded by the Act, whereas Section 21 prohibits child labour (i.e. recruitment of children under the age of 18). This Act is further relevant in terms of providing guidance on contracts, hours of work, weekly rest, maternity, sick leave, and many other aspects of employment that are relevant to the proposed development. The Contractor should ensure that his personnel are conversant with the provisions of this law and adhere to applicable labour practices.

Furthermore, the Act provides provisions for child labour in Malawi under the CAP 55:01. The minimum age of admission of a child to employment is set at 14 years. The Act further bars the engagement of young children within the14 and 18 age range to work in hazardous conditions. Consequently, the proposed project will have to take into account the provisions of the Act by

ensuring that children are not recruited and workers have the right to free access and assistance to a labour officer.

3.2.6 Land Act, (2016)

The Land Act of 2016 was enacted to regulate the land administration and management in Malawi. This Act classifies land into two main categories: "private land" and "public land." Public land includes both government-owned and unallocated customary land.

Furthermore, the Land Act contains provisions related to land acquisition, including compensation for individuals affected by development projects. Specifically, Section 13, Subsections (1), (2), and (3) of the Act stipulate that individuals who suffer any disturbance, loss, or damage to their interests in the land due to acquisition are entitled to reasonable compensation. In the context of the proposed project, it is important to note that all the land utilised for the project must be owned by KUHeS. This means that no structures shall be constructed on land that is not under the ownership of KUHeS, ensuring compliance with the Land Act provisions regarding land ownership and acquisition.

3.2.7 Land (Amendment) Act, 2022

The Act categorises land into three types: public land, customary land, and private land. “Public land” means land held in trust for the people of Malawi and managed by Government, a Local Government Authority or a Traditional Authority and includes:

- “Any land held by the Government or a Local Government Authority consequent upon a reversion thereof to the Government or Local Government Authority, as the case may be, on the termination, surrender or falling in of any freehold or leasehold estate therein pursuant to any covenant or by operation of law”; 35
- “Land acquired and privately owned by Government or a Local Government Authority used for dedicated purposes such as government buildings, schools, hospitals and public infrastructure”;
- “Land gazetted for national parks, recreation areas, forest reserves, conservation areas, historic and cultural sites”; and
- “Land vested in Government as a result of uncertain ownership; abandonment or land that cannot be used for any purposes”.

“Private land” means all land which is owned, held or occupied under a freehold title, leasehold title or as a customary estate or which is registered as private land under the Registered Land Act. “Customary land” refers to land held, occupied, and used in accordance with customary laws and practices prevailing in the traditional land management area. The proposed development will be implemented in accordance with the provisions of public land, as provided for in the Land (Amendment) Act, 2022.

3.2.8 Land Acquisition (Amendment) Act, 2017

The Act gives powers to the Minister or local government authority to acquire land for public utility, either compulsorily or by agreement, and pays appropriate compensation thereof. Section 4 of the Act gives powers to the acquiring authority to enter, dig, clear, set out, and mark the boundaries of the proposed land; all other acts are necessary to ascertain whether the land is or may be suitable, provided such entry is preceded by a notice to the occupier seven days before, and the acquiring authority is ready to pay for the damage done by the persons entering such land. Part II (A) provides for compensation assessment and the matters to be considered.

Section 9 states that the acquiring authority shall pay appropriate compensation and that this shall be in one lump sum. Section 10 lists the grounds for compensation as follows: loss of occupational rights, loss of land, loss of structure, loss of business, relocation costs, loss of goodwill, costs of professional expenses, injurious affection, nuisance, loss or reduction of tenure, or disturbance. Section 10 (A) lays down matters to be considered when assessing compensation for alienated land and matters to be disregarded when calculating compensation. The implementation of the proposed project will be performed within the existing land belonging to KUHeS. As such, there will be no land acquisition from the other parties. Therefore, there was no compensation to be paid.

3.2.9 Customary Land Act, 2016

The Land Act of 2016 provides several key provisions related to customary land in Malawi. Customary land, as defined in the Act, includes all land held, occupied, or used under customary law, but does not include public land. Traditional leaders are responsible for allocating land to their subjects in accordance with customary laws and the act. Sections 10 and 11 of the Act establish that a notice of intended demarcation must be issued, and that individuals claiming an interest in land within a development section must make their claims in the manner and within the specified timeframe outlined in the notice.

Part III, Section 17, addresses the transfer of customary land to the government or its reservation for the public interest. The Minister has the authority to direct the Commissioner to proceed according to the Act. Subsection 4 of Section 17 mandates that if any portion of the customary land to be transferred has been allocated to an individual or group of persons under a customary estate or derivative right to use the land, the land committee must inform these individuals of the notice's contents. Section 17, subsection 8, specifies that customary land transfers should occur subject to payment of appropriate compensation, as assessed by a registered valuer and agreed upon by the land committee and the Commissioner.

Section 20(1)(c) of the Act permits the allocation of a customary estate by a land committee to a partnership or corporate body with the majority of its members or shareholders being Malawian citizens. Although the proposed project site is on public land, it is important to note that this land

has been demarcated and apportioned by traditional authorities from customary land. Although there is evidence of stakeholder engagement during site identification and mapping activities, there is a clear need for continuous engagement throughout the construction and operation phases to ensure the ongoing support and cooperation of the traditional authorities and other stakeholders involved in the project. This engagement is essential for maintaining positive relationships and for ensuring adherence to legal and customary practices.

Provisions Includes

i. Recognition of customary land rights of communities and individuals holding land under customary tenure.
ii. Provide mechanisms for the registration and documentation of customary land rights to enhance tenure security and facilitate land transactions.
iii. Establishment of structures and procedures for the administration and governance of customary land, including the role of traditional leaders, community institutions, and local government authorities.

Regulate land use, promote sustainable land management practices, and resolve disputes over land use and allocation.

3.2.10 Water Resources Act (2013)

Provisions for water abstraction and use are contained in Part V of the Water Resources Act (2013), whereas water pollution is addressed in Part VIII (section 88-103) of the Water Resources Act (Government of Malawi, 2013). Section 39 describes the abstraction and use of water unless authorised through a licence. This means that for the purposes of water abstraction, KUHeS should apply for this licence from the National Water Resources Authority (NWRA).

Section 88 of the Act prohibits water pollution. The section states: “A person or public authority who, unless authorised under this Part, causes or allows effluent to be discharged directly or indirectly into water, or water to be polluted, commits an offence”. Section 89 prescribes precautionary measures for avoidance of pollution by warning that “Any person who owns, controls, occupies or uses land on which an activity or process is or was performed and which, unless authorised under this Part, causes, has caused or is likely to cause pollution of a water resource, shall take all such measures as may be necessary to prevent any such pollution from occurring, continuing or recurring.”

Therefore, KUHeS should not discharge effluents into nearby rivers. If it seeks to do so, the institution should receive authorisation (licence) from the NWRA and follow the guidelines accordingly.

3.2.11 Electricity (Amendment) Act (2016)

The Act in Section 1 makes provisions for the regulation of the generation, transmission,

distribution, sale, importation, exportation, use, and safety of electricity, and for matters connected therewith or incidental thereto. Part IV of the Act provides provisions regarding the distribution of electricity, and Section 31 states that every distributor shall supply electricity to every consumer who is able to make satisfactory arrangements for payment under a contract of supply with that operator. KUHeS is required to have a contract, and electricity is supplied by the Electricity Supply Corporation of Malawi (ESCOM). Section 33 states that a consumer shall not be entitled to a standby supply of electricity from the distributor with respect to any premises unless the consumer has agreed to pay and has given security to pay, such a minimum annual sum as will give to the distributor a reasonable return. This implies that the refinery will have to source its own standby electricity supply system unless it is willing to enter into an agreement with the ESCOM to supply this for them. Section 36 stipulates that "A customer shall ensure that the operations on his/her system does not interfere with the smooth and safe operation of the Licensee's system to which he/she is connected." This implies that the facility is not supposed to make alterations or carry out activities that jeopardise the supply of the ESCOM's electricity to other clients.

3.2.12 Local Government Act, 1998

The Local Government Act of 1998 provides legal authority for local councils to plan, administer, and execute various issues and development programs within their respective geographic districts. Local environmental planning and management are crucial functions of the local councils. Section 2 of the second schedule of functions outlined in the Local Government Act specifies several environmental management functions including town planning, building control, local afforestation programs, control of soil erosion, and proper management of solid and liquid waste.

For instance, Section 19(3) of the Act grants the Council the power to prohibit or control the unauthorised cultivation of public land, land reserved for public roads, and unenclosed or unoccupied land under private ownership. In the context of the proposed project, it is advisable for the University to collaborate closely with city councils in the project's design and implementation. This collaboration is essential to ensure effective engagement with local communities, resolve potential social misunderstandings, and jointly establish an equitable development agenda for the project areas. By working in partnership with city councils, the University can navigate regulatory requirements, promote community participation, and achieve the project's goals in harmony with local governance structures and environmental management mandates, as outlined in the Local Government Act.

3.2.13 Disability Act (2013)

This act is a significant step towards ensuring equal opportunities and rights for people with disabilities. By promoting policies and legislation that aim to equalise opportunities, protect rights, and fully integrate persons with disabilities into all aspects of life, they recognise their inherent dignity and well-being. One notable aspect is the recognition of the role of the private sector and civil society organisations in promoting and protecting the rights of persons with disabilities.

Encouraging partnerships in programs that address their needs and concerns underscores a collaborative approach to tackling the barriers to inclusion. Sections 9 and 13 of the Act are particularly commendable, as they prohibit discrimination in accessing premises, provision of services, and employment opportunities based on disability. This demonstrates a commitment to ensure that persons with disabilities have equal access to facilities and employment opportunities. The project will ensure that buildings, facilities, and infrastructure are made accessible to all people with disabilities. and promotes equal employment opportunities for persons with disabilities.

3.2.14 Public Health Act, 1948

The Public Health Act of 1948 serves as a legal framework governing the planning and management of various health-related issues, including environmental health, occupational health, and solid waste management. Section 59 of the Act explicitly prohibits activities that cause nuisances, such as factories or trade premises that are unclean, emit offensive odours from drains or latrines, lack proper ventilation, or have inadequate lighting, all of which could be injurious or dangerous to the health of employees working in those places. Other nuisances addressed in the Act include failing to provide sufficient sanitary latrines and discharging wastewater into public watercourses not designated for such discharge. This underscores the proponent's responsibility to carefully manage school premises and refrain from causing nuisances that affect the public.

Section 88 of the Act outlines the requirements for separate toilets for both males and females in public buildings or structures that will be used by both genders. Therefore, the proposed project should ensure the provision of suitable toilet facilities for male and female students and staff members, and separate facilities for male and female Contractors. Additionally, the project should construct proper stormwater drains to effectively manage rainwater and prevent flooding or other water-related nuisances. Compliance with these provisions is essential for maintaining public health and safety in the operational area of the project.

3.2.15 Occupation Safety, Health, and Welfare Act, 1997

Occupation Safety Health and Welfare Act (OSHWA) is an Act which makes provisions for the regulation of employment conditions in workplaces with regard to the safety, health, and welfare of persons employed therein; for the inspection of certain plants and machinery, and the prevention and regulation of accidents occurring to persons employed or authorized to go into the workplaces, and to provide for matters connected with or incidental to the foregoing provisions for a safe working environment for the people of Malawi.

Part II of the OSHWA gives provisions on registration of a workplace as indicated in Section 6 that the director shall keep a register of workplaces in which he shall cause such particulars to be entered in relation to every workplace required to be registered under this Act as he may consider necessary or desirable. Section 7(1) continues to stress that the premises are not to be used as workplaces, unless registered.

Part III of the OSHWA stipulates provisions for the duties and responsibilities of the developer, as stated below:

"13. Duties of employers

(1) It shall be the duty of every employer to ensure the safety, health and welfare at work of all his employees.

(2) Without prejudice to the generality of an employer's duty under subsection (1), the matters to which that duty extends includes in particular—

a) The provision and maintenance of plant and systems of work that are safe and without health risks.;

b) Arrangements for ensuring safety and absence of health risks in connection with the use, handling, storage and transportation of articles and substances.

c) The provision of information, instruction, training, and supervision in accordance with Section 65 to ensure the safety and health at work of his employee.

d) Regarding any place of work under the employer's control, the provision of maintenance in a manner that is safe and without health risks, and the provision and maintenance of means of access to and egress from it that are safe and without such risks;

e) The provision and maintenance of a working environment for his employees that is safe, without risks to health, and adequate as regards facilities and arrangements for their welfare at work."

It is envisaged that various Occupational Safety and Health (OSH) issues will be encountered during implementation of the proposed project. Hence, it is imperative for the developer to ensure that the OSH requirements are always adhered to. Therefore, this report will have to outline the interventions required for implementation and monitoring during the lifespan of the project. The Project ensures that all measures, including those on safety, as outlined in the ESMP, are fully implemented.

3.2.16 Environment Management (Waste Management and Sanitation) Regulations, 2008

The Environment Management (Waste Management and Sanitation) Regulations of 2008, a subsidiary legislation of the Environment Management Act (EMA), built upon the provisions of the Public Health Act of 1948. These regulations serve to expand and elaborate on the EMA's requirements for the management of various types of waste. They provide definitions for different forms of waste, allocate roles and responsibilities for waste management, and establish protocols for handling various waste categories including general/municipal solid waste, municipal liquid waste, and hazardous waste.

For instance, the Regulations define hazardous waste as any waste identified in the Seventh Schedule (Categories of Hazardous Wastes to be Controlled) or any waste exhibiting the characteristics defined in the Eighth Schedule (List of Hazardous Characteristics). This includes

medical and infectious waste. Hazardous characteristics cover various aspects, such as corrosiveness, ecotoxicity, explosiveness, flammability, and other traits that make waste potentially harmful to health or the environment.

Section 8 of the Regulations places responsibility on every waste generator to ensure the safe and sanitary storage of general or municipal solid waste on their property. This prevents the attraction of vectors, creates nuisances, and ensures efficient and safe waste removal or collection. KUHeS project implies that the institution should take responsibility for managing all forms of waste generated throughout the project's lifecycle in compliance with these regulations, ensuring proper storage, handling, and disposal to safeguard public health and the environment.

3.2.17 Environment Management (Chemicals & Toxic Substances) Regulations (2008)

Part I, Section 3(1) of the regulation mention application by stating that "these Regulations apply to any person in Malawi whose undertaking involves or includes the manufacturing, repackaging, importation, exportation, transportation, distribution, sale or other mode of handling toxic substances and chemicals and in respect of any activity in relation to toxic substances and chemicals which involves a risk of harm to human health or the environment." Part II of the regulations stipulate the management of chemicals and toxic substances. Section 4 (1) puts forth a requirement for licences as it points to the need to obtain a licence issued by the Director for manufacturing, repackaging, importing, exporting, transporting, distributing, selling, or other modes of handling chemicals and toxic substances. Section 26 stipulates regulations regarding the treatment of chemical wastes and requires that no industry discharges any chemical waste in any state into the environment unless such wastes have been treated in accordance with acceptable international methods that are approved by the director in consultation with the relevant local authority. The proposed project may involve handling and storing hazardous materials and chemicals such as chemicals for the treatment of termites in buildings. During operation phase, the facility will be managing hazardous chemicals in the laboratories namely; infectious waste, sharps, pharmaceutical waste, cytotoxic waste, chemical waste, pressurized containers and general health care waste among others. This implies the need for a project to obtain transportation, handling, and storage licenses for chemical and toxic substances from the Malawi Environment Protection Authority.

3.2.18 Labour Relations Act (1996)

This legislation was enacted to foster positive labour relations by safeguarding and fostering freedom of association, encouraging effective collective bargaining, and facilitating the structured and swift resolution of disputes that contribute to both social justice and economic progress. In Part II, Section 4 of the Act asserts that all individuals possess the right to freedom of association, encompassing the liberty to establish and become part of organisations of their preference. The Act also outlines the mechanisms for resolving disputes between employers and employees. The developer is committed to adhering to the mandates of the Act, ensuring that workers can exercise

their right to associate and utilise the procedures outlined within the Act to address and resolve conflicts with their employers. The project will ensure that they do not employ children below the age of 18 years.

3.2.19 Public Health Corona Virus Disease of 2019 (COVID-19) (Prevention, Containment and Management) Rules, 2020.

COVID-19 was declared a global pandemic by the WHO Health Organization. On 21 March 2020 the government declared Malawi a State of Disaster based on the coronavirus attack and subsequently announced preventive measures. On 4 April 2020 the government announced additional preventive measures against the national response to COVID-19. The Public Health rules on COVID-19 place duty and responsibility on both the employer and employee. The general preventive measures announced are as follows:

- Employers/employees returning from areas of significant risk and those who have had contact with infected persons to undergo self-quarantine and strictly observe quarantine rules and where necessary, be placed under institutional quarantine.
- Covering the nose and mouth with disposable tissue when coughing or sneezing and coughing into the crook of the elbow when tissue is not available.
- Avoiding touching the eyes, nose, and mouth
- Eating thoroughly cooked food, such as, meat and eggs; and
- Avoiding handshakes and close contact.

Both employers and employees play a significant role in protecting people from Coronavirus, protect jobs, protecting income, and ensuring business continuity. Implementation of Guidelines Employers must:

a) Appoint a team including representatives of senior management, supervisors, employee representatives, and responsible enterprise safety and health personnel to facilitate the implementation of these guidelines. The team is at liberty to add any additional measures that are appropriate and consistent with the laws of Malawi to improve its response to COVID-19.
b) Ensure the dissemination of these guidelines and measures issued by authorities to all employees. Employees must:

- Cooperates with employers to implement these guidelines.
- Through their COVID-19 Team Leader, report to the Secretary responsible for Labour any employer who contravenes these guidelines. The Ministry responsible for Labour is mandated to undertake workplace inspections to ensure compliance with these guidelines.

The developer of the proposed project shall ensure that COVID-19 guidelines are implemented, followed by both the employer and employees.

3.2.20 Gender Equality Act (2013)

The purpose of the Gender Equality Act is to address the inequalities that exist between men and women in many aspects of daily life in Malawi. The Act seeks to promote gender equality, equal integration, influence, empowerment, dignity, and opportunities for men and women in all functions of society; prohibit and provide redress for sex discrimination, harmful practices, and sexual harassment; and provide public awareness on the promotion of gender equality. The Act applies to all people and matters. This means that it applies to private and public institutions, including religious settings and chiefs. This also applies to the government. It affects all aspects of life in Malawi. The Act in Part 2 prohibits sexual discrimination and harmful social or cultural practices. Section 7 calls for all workplace policies to ensure that sexual harassment is avoided. KUHeS is obligated to ensure that these principles are included in all its activities, specifically in relation to employment and providing a conducive environment without sexual harassment and any other types of gender discrimination.

3.2.21 HIV and AIDS (Prevention and Management) Act, 2018

The HIV and AIDS (Prevention and Management) Act makes provision for the prevention and management of HIV and AIDS; provisions for the rights and obligations of persons living with HIV or affected by HIV and AIDS; provisions for the establishment of the National AIDS Commission; and provisions for matters incidental thereto or connected therewith. Part 4, Section 6 (1) states that discrimination based on HIV or AIDS is prohibited. Part 5, Section 9.

(1) states that a person living with HIV has the right to privacy and confidentiality regarding information concerning their status. Part 8 of this Act gives provisions to employers by stipulating requirements in several sections quoted as follows:

a) Section 26 states that an employer shall not require any person to undergo HIV testing as a pre-condition for recruitment;
b) Section 27 (1) states that an employer shall not terminate the employment of an employee solely on the ground that the employee is living with HIV or is perceived to be living with HIV;
c) Section 28 (1) states that an employee shall not be discriminated against or be subjected to unfair treatment solely on the ground that he is perceived to be or is living with HIV; and
d) Section 32 (1) states that the State shall ensure that employers adopt and implement an HIV and AIDS policy at the workplace.

The implication of the project is that it will implement interventions to manage HIV and AIDS that respond to the requirements of the Act. The project will need to have an HIV and AIDS workplace policy as a guide for implementing interventions.

3.2.22 National Construction Industry Act, 1996

The act regulates the operation of construction activities in the construction industry. Section 20 of the Act specifies that no person shall carry on business in the construction industry in Malawi unless he is registered under this Act, and no person being registered under this Act shall carry on business of a category in respect of which he is not registered. Therefore, the project will involve only registered business personnel in the construction industry.

3.2.23 Child Care, Protection and Justice Act (2010)

This is an Act that consolidates the law relating to children by making provision for childcare and protection and for child justice, and for matters of social development of the child. Part II, Division 6 of the Act has provisions for the protection of children from undesirable practices that include child abduction, child trafficking, harmful cultural practices, forced marriage or betrothal, pledge of a child as security and other offences.

The construction project has put in place mitigation measures that prevent child labour and has developed a child safety management plan that is in line with the Act.

3.3 Regulatory Licenses and Approvals

Table 3-1 summarises all the regulatory licences, approvals, and standards that must be obtained or met for the proposed project to ensure that the project activities are in line with sound environmental management practices and comply with relevant legislation.

Table 3-1:Regulatory Licences and Approvals

No	List of statutory approvals/Licences to be obtained required for the project	Regulatory Framework	Responsible department for processing/ approval/ license	Designated responsible for processing
1	Environmental and Social Assessment Approval To guide the synchronisation of environmental management in the proposed project	Environmental Management Act (2017)	Malawi Environment Protection Authority (MEPA	Director General of MEPA
2	Workplace registration certificate The guide measures for ensuring that the construction sites are safe and secure workplaces to work in.	Occupational Safety, Health and Welfare Act (1997)	Ministry of Labour	Director of Occupational Safety, Health and Welfare
3	Water User Rights	Water Resources Act (2013)	The rights are offered by the National Water Resources Authority. With these rights, the developer can use water for various uses.	National Water Resources Authority (NWRA)
4	Development Permission	Physical Planning Act, (2016)	It is a requirement to obtain a development permission issued by the council's planning committee	Lilongwe City Council

3.4 World bank Environmental and Social Standards

KUHeS will also commit to adhering to the implementation of WB Environmental and Social Standards (ESS) and any relevant industry sector guidelines. The following are the ESS and anticipated environmental and social impacts related to the implementation of the project.

a) ESS1 Assessment and Management of Environmental and Social Risks and Impacts

ESS1, under the World Bank, applies to all projects financed by the Bank through Investment Project Financing (IPF). The KUHeS project, designed for bank financing, must undergo mandatory assessment and management of social risks and impacts.

ESS1 outlines the borrower's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts at each project stage supported by the Bank through IPF. Borrowers must conduct environmental and social screenings and assessments to ensure project sustainability. A generic screening form is provided in Annex 1 for initial screening, but the assessment should be proportionate to the project risks and impacts. It informs the subproject design, identifies mitigation measures, and aids in decision making. Borrowers may use their national environmental and social frameworks if they align with the ESS objectives. The Environmental and Social Management Framework (ESMF) facilitates assessment and offers recommendations to improve the environmental and social performance of the SAVE project during design and implementation. KUHeS will endeavour to identify and manage all the impacts that would result from the implementation of this project, that is, through screening, development, and implementation of this ESMP and periodic monitoring.

b) ESS2 Labour and Working Conditions

ESS2, the World Bank's Environmental and Social Standard 2, outlines the occupational safety and health requirements of all programs. It introduces labour management procedures, emphasises non-discrimination and equal opportunity, and covers the treatment of various worker categories, including vulnerable groups such as women, persons with disabilities, and children. The standard mandates a grievance mechanism accessible to all workers to address workplace concerns in projects, such as the KUHeS Project. It also provides guidance on occupational safety and health measures, emphasising hazard elimination, control, safe work systems, and personal protective equipment based on job hazard analyses. Project committees should be trained in occupational health and safety including the establishment of OHS management plans.

ESS2 also promotes equal opportunities, prohibits discrimination, and supports workers' right to association and collective bargaining. KUHeS will ensure that it recognises the importance of employment and income generation for poverty reduction and inclusive economic growth while emphasising fair treatment of workers, safe working conditions, and addressing issues such as child labour, forced labour, HIV and AIDS, and gender-based violence to enhance project development benefits.

c) ESS3 Resource Efficiency and Pollution Prevention and Management

ESS 3 acknowledges that economic activities and urbanisation can frequently lead to the emission of pollutants into air, water, and land, as well as the depletion of finite resources. These actions may pose threats to people, ecosystem services, and the environment on both the local and global scales. Therefore, ESS 3 establishes essential guidelines to tackle the challenges of resource efficiency and pollution prevention and management at every stage of a project's life cycle. In the context of the KUHeS project, comprehensive measures will be taken to manage the environmental impacts associated with the project throughout its life cycle. This includes addressing issues such as emission control, prevention of water contamination, mitigation of land degradation, noise and vibration reduction, and effective management of increased waste generation. These actions are integral to ensuring the sustainability of the project and minimising its adverse effects on the environment and surrounding communities.

d) ESS4: Community Health and Safety

The standard specifically focuses on addressing health, safety, and security risks and their potential impact on communities affected by the project. Borrowers are obligated to take measures to prevent or minimise these risks and impacts, with special consideration for individuals who may be particularly vulnerable owing to their unique circumstances.

In alignment with this requirement, KUHeS will proactively manage the associated impacts, such as the increased risk of theft and vandalism within the affected communities. Additionally, the project will prioritise the enhancement of community health and safety, which encompasses addressing issues related to traffic and road safety risks. These efforts are aimed at safeguarding the well-being of community members and ensuring their security throughout the project's implementation.

e) SS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS 6 underscores the critical importance of safeguarding biodiversity and adopting sustainable practices for the responsible management of living natural resources, both of which are fundamental for promoting sustainable development. It places strong emphasis on preserving the essential ecological functions of habitats, including forests, and the rich biodiversity they support. ESS 6 also deals with the sustainable handling of primary production and the harvesting of natural resources. Furthermore, it acknowledges the need to consider the livelihoods of individuals or communities affected by a project, particularly when the use of biodiversity or living natural resources may be impacted. In the context of the proposed project site, it is recognised that flora and fauna may be disrupted during the implementation of the project. KUHeS is committed to taking proactive measures to avoid, reduce, and offset such impacts throughout the project's implementation. These actions are integral to the project's dedication to environmental sustainability and preservation of the local ecosystem and its inhabitants.

f) ESS10: Stakeholder Engagement and Information Disclosure

ESS 10 places significant importance on fostering open and transparent communication between the borrower and all project stakeholders, considering this as a fundamental component of adhering to international best practices. It recognises that successful and effective stakeholder engagement can have a profound impact on improving the environmental and social sustainability of projects, fostering greater acceptance and support from the community and ultimately contributing to the successful design and execution of the project. KUHeS is committed to conducting project activities in strict accordance with the Stakeholder Engagement Plan (SEP). This plan outlines strategies and actions to facilitate communication, consultation, and collaboration with various project stakeholders to ensure that their concerns and perspectives are considered throughout the project's life cycle. Additionally, KUHeS will diligently implement the project Grievance Redress Mechanism (GRM), providing a structured and accessible channel for stakeholders to raise concerns, provide feedback, and seek resolution to issues related to the project. These efforts will help to maintain transparency, build trust, and ensure the project's alignment with the needs and expectations of the community and other relevant stakeholders.

Chapter Four: Environmental and Social Setting

This chapter provides a concise description of the main biophysical and socioeconomic aspects of the project area. A study of the existing environment for the project has been carried out on the physical, biological, and socioeconomic environments of the project impact areas. The physical and biological environments that have been studied include climate, topography and geology, soil hydrology, Flora and Fauna, and socioeconomic factors.

4.1. Bio-Physical Environment

4.1.1 Topography and Landscape Features

Kamuzu University of Health Sciences is in the central part of Lilongwe City, a predominantly flat area with elevations ranging from 1,000 to 1,200 m above sea level, along the Lilongwe River. The northern part of the city is undulating, with several small streams flowing eastward. The landscape features of the project site are typical of most of the arable lands of the Lilongwe plains. Currently, the project site has natural grass and shrubs growing on the site.

4.1.2 Geology

The geology of the project area is dominated by crystalline Precambrian to lower Palaeozoic rocks, that have been affected by the polycyclic Mozambique orogeny (Carter and Bennett, 1973) and generally referred to as the Basement Complex (Carter and Bennet, 1973). Pelitic to semi-pelitic rocks including banded hornblende-biotite gneisses with intercalations of marbles, calc-silicate gneisses, quartzites, and mica schists cover many parts of the country. With a flat surface and deep Palaeozoic rocks in the proposed office complex area, the site makes it suitable for construction of structures of this nature, as the geology of the site is generally stable.

4.1.3 Soils in the Project Area

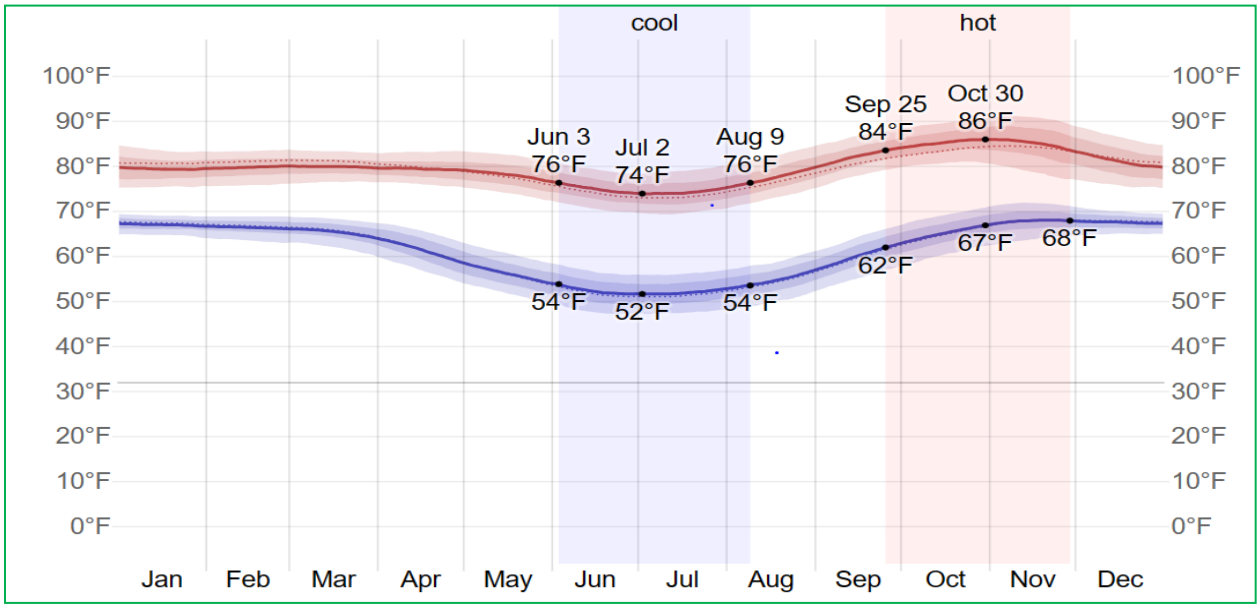
The project area has clay loamy reddish-brown soils with typical properties of a ferruginous soil pattern. The Lilongwe soil series includes several members that vary in type, depth, and maturity. The project area is mostly characterised by the Mwanjema series which are rich soils for agriculture. These soils are less exposed to the risk of erosion due to their deep sub-layer which encourages infiltration of runoff suitable for building purposes. Erosion surfaces are not commonly seen in this area despite a considerable loss of land cover over the past few years.

4.1.4 Climate

Lilongwe features a humid subtropical climate that borders a subtropical highland climate with warm summers and mild winters. In general, climatic information is critical because it guides the proper planning and timing of a project. Not only does it help to avoid or minimise the negative impacts of the project on the environment, but it also guides the strategic and optimal timing of enhancement measures for various project activities and operations. The following sections describe the climatic conditions of the study area.

Temperature

According to the monthly mean, high temperatures range from 23oC(74F) in July to approximately 31oC(86F) in November. The project site experiences low temperatures in May, June, and July, and hot temperatures in September, October, November, and December.



Average High and Low Temperature in Lilongwe
Source: weatherspark.com

Rainfall

Regarding rainfall, Lilongwe receives an average of approximately 850 millimeters (33.5 in) of rain annually between November and April. The heaviest rainfall, up to 200 mm (9 inches), occurs mainly in January and February, while it barely rains between May and October. Tropical rains usually occur in the form of intense downpours or afternoon thunderstorms.

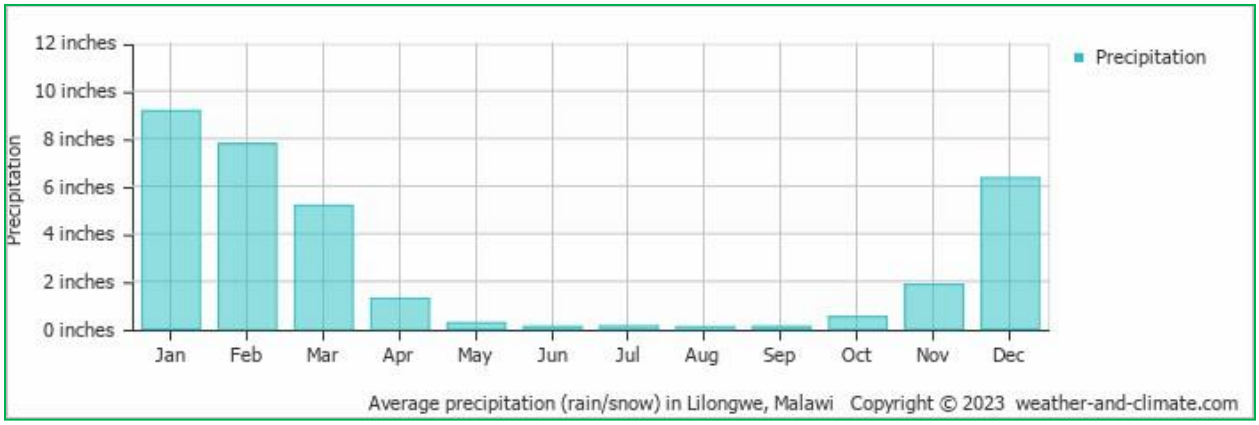


Figure 4- 1: Average precipitation of the project area
Relative humidity

Using data obtained from weather-and-climate.com, it was inferred that the project site experiences a mean annual humidity of 66% with high episodes measured in February at 82% and low episodes in August at 55%.

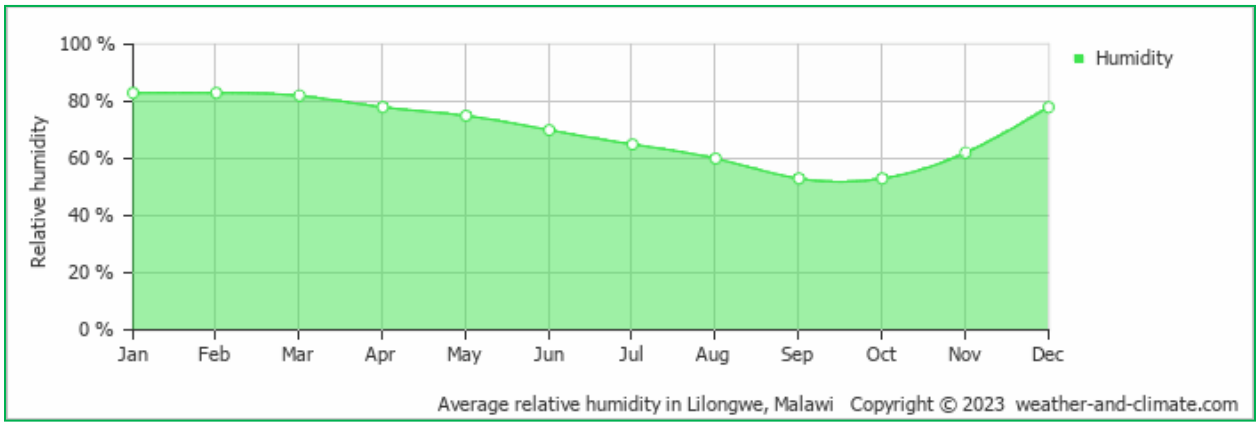


Figure 4- 2: Relative humidity of the project area

4.1.4 Water Quality Status of Lilongwe River

Three sets of water samples were obtained from the Lilongwe River, situated approximately 1 km from the project site, taken from various points along the river. The sampling locations were as follows: (1) approximately 150 meters upstream of the project area, (2) directly across the project site, and (3) downstream of a Road Bridge. The collection and analysis of these samples followed the methods outlined in the 23rd Edition (2017) of "Standard Methods for the Examination of Water and Wastewater."

Laboratory analyses of the samples were conducted at the Water Quality Laboratory, which is part of the Department of Water Resources in Lilongwe. Standard cations, anions, and pollution monitoring parameters were examined. The results are also presented in Table 4-1 and were compared against the Malawi Standards used for pollution monitoring and assessment of the ambient water quality status.

Table 4- 1: Water Quality results of the area near the project site

Sampling Position	***p*H**	**EC (µS/cm)**	**DO (mg/L)**	**BOD_5, (mg/L)**	**COD_{cr}, (mg/L)**	**SS (mg/L)**	**PO_4^{3-} (mg/L)**	**Fecal Coliforms, counts/100ml**
Upstream	7.67	338	6.2	10.1	16.7	18	0.07	420
Mid-stream at Project site	7.61	330	6.90	11.6	20.2	11.6	0.08	489
Downstream at Road Bridge	7.52	332	7.7	12.3	22.7	13	0.05	604
Wastewater Standards (MS691:2005)	**6.5-9.0**	NM	5	**20**	**70**	**30**	**0.15**	**-**

In this section of the river, the water is moderately mineralised, with an electrical conductivity (EC) ranging from 330 to 338 µS/cm. Notably, no significant differences were observed between the three sampling points. As for the other monitored parameters, there is a slight decline in water quality within the studied section of the river. This decline is also relatively minor and indicates a diffuse source of impact that gradually increases as you move downstream, particularly in terms of biochemical oxygen demand (BOD_5) and chemical oxygen demand (COD). The upstream area of the project section hosts commercial and industrial activities, and their influence on the water quality may become more apparent downstream.

4.2 Biological Environment

4.2.1 Fauna

The project area is located within KUHeS premises. No engendered animal species were found in the area. However, the animals found included bettles, tree squirrels (*Paraxerus cepapi*), multimammate mice (*mustomys natalensis),* birds (*Estrildidae and Malaconotinidae species*), millipedes, insects (*Meloidae-Mylabris dicincta species, Pamphagidae- Loboceliana sp., Orthoptera)*, centipedes, and many other commonly found in domestic setups.

Figure 4- 3: Evidence of presence of mammals

4.2.2 Flora

The project area contains several tree species, mainly natural trees. The common tree species in the project were recorded as bamboo, *Caesalpiniodeae, Jacaranda,* and *Papilionoideae*. Additionally, there were clades of trees, herbs, lianas, and shrubs in the pea family that mostly grow in tropical and subtropical climates. They are typically characterised by radially symmetric flowers, with petals that are divided twice (valvate) into buds and numerous showy, prominent stamens. However, none of these species are endangered.

Figure 4- 4: Tree species found on project site

4.3 Socio-Cultural Environment

4.3.1 Population

Lilongwe stands out as the most rapidly expanding urban center in the nation, spanning approximately 728,000 hectares. According to the 2018 population census, the city of Lilongwe has a total population of of 989,318 with 497,201 males and 492,117 females. Zooming into the project area situated in Area 33, as per the NSO 2018 data, it accommodates an estimated population of 26,992people, comprising 33,565 males and 13,427 females. The population of KUHeS Lilongwe campus is estimated to be 1500. This figure includes the student population, which is estimated to be 1200, and the remaining figure is that of the academic and support staff. The proposed facility is expected to accommodate more than 2000 people hence, the campus population is expected to increase.

4.3.2 Health

Kamuzu Central Hospital is the nearest major hospital to the project site, serves as a referral health centre, and offers a wide range of services. These services include specialist clinical care, acting as a teaching and practicing hospital for students from Kamuzu University and Health Sciences (KUHeS), Malawi College of Health Sciences, and the Christian Health Association of Malawi (CHAM) Nursing University. In addition, it supports research and helps district hospitals. As the largest referral health facility in Malawi, Kamuzu Central Hospital houses advanced specialist care centres in the fields of Obstetrics/Gynecology, Oncology, Neurosurgery, Pathology, and General

Surgery. Other health centres in the area include the Kawale Health Centre, Area 18 Health Centre, African Bible University Clinic, and Likuni Mission Hospital.

4.3.3 Education

There are no primary or secondary schools in the vicinity of the project site. This could be attributed to the zoning of Area 33, which is an industrial area. However, there are two campuses of the Kamuzu University of Health Sciences: Upper Campus (formerly Kamuzu College of Nursing) and Lower Campus (Formerly College of Medicine). The project is located on the Upper Campus.

4.3.4 Water Supply

The Lilongwe Water Board is the responsible agency for the supply of potable water in the city and, as such, also supplies in Area 33 where the proposed project will be located. It is estimated that LWB serves 75 percent of the city's population. The actual average consumption is 88 litres per person per day. LWB receives water from the Lilongwe River. The two reservoirs of Kamuzu 1 at Malingunde and Kamuzu 2 at Msinja have a combined safe yield of 86,000 cubic meters per day. According to LWB, the average daily water production is 125,000 cubic meters per day. However, owing to the low water levels in the Lilongwe River, the current water production is approximately 75,000 cubic meters per day. The project site will be connected to the Lilongwe Water Board water supply for both domestic and fire safety.

4.3.5 Power Supply

The Electricity Supply Corporation of Malawi (ESCOM) is responsible for supplying electricity to Lilongwe. According to the National Statistical Office of Malawi (2007), approximately 46% of households in Lilongwe utilise electricity for lighting, whereas only 18.5% utilise it for cooking purposes. ESCOM will provide electricity to the project site. Some facilities, notably Mbiri and Tsogolo Halls of Residence, are outfitted with solar panels to power 100% LED light fittings and heating up water, meeting approximately 36% of the building's annual hot water needs. Furthermore, the institution has deployed five (5) generators to ensure backup power availability in case of campus power outages. No electricity powerlines or infrastructure were affected by the project.

4.3.6 Road Infrastructure

The city has three different types of roads: main, secondary, and minor. M1 is the main road that goes from north to south. From M1, secondary and minor roads go to the main parts of the city and neighborhoods, especially in the south. The main and secondary roads are in good shape. According to the location of the project area, it can be easily accessed from Mzimba Drive, Kenyatta Drive, and Lali Lubani Road.

4.3.7 Transportation and Telecommunication

The project area features a comprehensive road network consisting of main, secondary, and minor roads. Specifically, the project site is situated adjacent to Mzimba Road, which connects to urban roads, such as Lali Lubani Road and Kenyatta Road. These roads extend further into urban areas, including development zones and settlements, facilitating connectivity within the vicinity. Minibuses, tricycles, and bicycle taxis serve as the primary means of transportation in Lilongwe urban. Most of the population uses minibuses to move around the city. Taxis are an option, but tend to be too costly for most people. In terms of telecommunication, the project area has access to services provided by Telekom Networks Malawi Limited (TNM), and Airtel, Access, and Malawi Telecommunications Limited (MTL) are the main providers of telephone services in the district.

4.3.8 Security

Security in Lilongwe City is managed by both public and private organisations, but unfortunately, the city experiences a relatively high level of crime, most of which is reported at the Lilongwe Police and Sanctuary Police Unit. Kamuzu Central Hospital Police Unit serves as the nearest police facility to the site and has encountered several instances of criminal activity. These crimes included various offenses like murder, rape, theft, defilement, sodomy, armed robbery, violent burglary, motor vehicle theft, cattle theft, misconduct by public servants, bicycle theft, and indecent assault.

4.3.9 Solid Waste Management and Sanitation

The Lilongwe City Council is responsible for overseeing waste management and sanitation provisions within the city. While formal areas typically have access to basic urban services, informal settlements and Traditional Housing Areas often lack access to these services.

Solid waste management is facilitated by the use of a skip bin located on campus, which is collected by the council once per month. However, temporary waste storage facilities have been provided during the design to carter for general waste expected to be generated from the facility. New arrangement will be required to be made with the waste collection frequency by the city council in cases where the waste skip bin is not sufficient for weekly collection. The solid waste collected is disposed at the landfill site at Area 38/2, opposite Bunda turn off. Regarding liquid waste, the Lilongwe City Council manages sewage through its sewer line system. The current plan is to connect the proposed facility to an existing sewer line. It is crucial for the project to consider sewer line issues during the facility design phase to ensure compatibility with existing sewage infrastructure. This will help to seamlessly integrate the facility into the city's waste management system and promote efficient and effective liquid waste disposal.

Chapter Five, Impact Analysis, and Identification

This Chapter presents the key impacts of the project, the methodology used to identify the impacts, impact rating, and proposed mitigation and enhancement measures for the impacts.

5.1 Impact identification

The assessment of potential environmental effects resulting from project-related activities has been carried out in accordance with EMA (2017) and the World Bank Environment and Social Framework, using a methodology framework developed based on internationally accepted practice, and the professional experience of the study team. The assessment considered the potential environmental effects of physical work and activities, including environmental changes that may result from the proposed undertakings. Specifically, the assessment started by identifying the issues by scoping and selecting Valued Environmental Components (VECs) on which to focus. VECs are components of the environment that society values and upon which assessment is focused. Thereafter, the assessment identified the environmental effects of project activities by project phase, including those resulting from the interaction of the project with the environmental effects identified for past, present, and future projects that will be carried out and the changes to the project caused by the environment. The VECs for this project were identified through a process whereby the features and activities (both planned and unplanned) associated with the planning and designing, construction, and operation phases of the project were considered with respect to their potential impact on resources or receptors. This method identifies VECs and activities that could reasonably act as a source of impact and the vertical axis of a Potential Interaction Matrix presented in Table 5-1.

Figure 5- 1: Potential Interaction Matrix of the project impacts

Receptor Component		Anticipated Environmental and Social Impacts																									
		ESS 2						ESS 3							ESS 4						ESS 5		ESS 6		ESS10	
		Occupational Safety and Health	Risk of Forced Labour	Risk of Child Labour	Impact on Economy &	HIV and AIDS	Risk of GBV & Sexual	Resource Consumption	Soil contamination	Air Quality & Fugitive	Noise and Vibration	Water Contamination	Land Degradation	Increased Waste Generation	Provision of Education Services	Conflict on use of Amenities	Traffic & Road Safety Risks	Increase in theft and vandalism	Community Health and Safety	Forced Eviction	Involuntary Resettlement	Impact on Flora	Impact on Fauna	PAP awareness of project	Community Grievance Redress
SN	**Project activity/Hazard**																										
1	**Planning Phase**																										
1.1	Design of Proposed Structures																										
1.2	Obtain necessary Approvals																										
2	**Construction Phase**																										
2.1	Land Clearance																										
2.2	Excavation and Civil Construction																										
2.3	Equipment/Material/ Worker Transport																										
2.4	Waste Storage and Disposal																										
2.5	Construction Workers Presence																										
3	**Operational Phase**																										
3.1	Operation of Facility																										

Receptor Component		Anticipated Environmental and Social Impacts																							
		ESS 2						ESS 3							ESS 4						ESS 5		ESS 6		ESS10	
		Occupational Safety and Health	Risk of Forced Labour	Risk of Child Labour	Impact on Economy &	HIV and AIDS	Risk of GBV & Sexual	Resource Consumption	Soil contamination	Air Quality & Fugitive	Noise and Vibration	Water Contamination	Land Degradation	Increased Waste Generation	Provision of Education Services	Conflict on use of Amenities	Traffic & Road Safety Risks	Increase in theft and vandalism	Community Health and Safety	Forced Eviction	Involuntary Resettlement	Impact on Flora	Impact on Fauna	PAP awareness of project	Community Grievance Redress
SN	**Project activity/Hazard**																								
3.2	Waste Storage and Disposal																								

KEY		Scoped In	Positive Impacts
		Scoped Out	Scoped Out with Justification

5.2 Significance Ranking of the Impacts

The key objective of implementing this methodology was to identify any potential environmental issues and associated impacts likely to arise from the proposed project, and to propose a significance ranking. Issues or aspects were reviewed and ranked against a series of significance criteria to identify and record interactions between activities and aspects, and resources and receptors to provide a detailed discussion of their impacts. The assessment considered direct[1], indirect[2], secondary[3], as well as cumulative impacts[4]. A standard risk assessment methodology was used to rank the identified environmental impacts pre-and post-mitigation (i.e. residual impact). The significance of environmental aspects is determined and ranked by considering the criteria[5] presented in table 5-2.

Figure 5- 2: Impact Assessment Criteria and Scoring System

CRITERIA	SCORE 1	SCORE 2	SCORE 3	SCORE 4	SCORE 5
Impact Magnitude (M) The degree of alteration of the affected environmental receptor	Very low: No impact on processes	Low: Slight impact on processes	Medium: Processes continue but in a modified way	High: Processes temporarily cease	Very High: Permanent cessation of processes
Impact Extent (E) The geographical extent of the impact on a given environmental receptor	Site: Site only	Local: Inside activity area	Regional: Outside activity area	National: National scope or level	International: Across borders or boundaries
Impact Reversibility (R) The ability of the environmental receptor to rehabilitate or restore after the activity has caused environmental change	Reversible: Recovery without rehabilitation		Recoverable: Recovery with rehabilitation		Irreversible: Not possible despite action
Impact Duration (D) The length of permanence of the impact on the environmental receptor	Immediate: On impact	Short term: 0-5 years	Medium term: 5-15 years	Long term: Project life	Permanent: Indefinite
Probability of Occurrence (P) The likelihood of an impact occurring in the absence of pertinent environmental management measures or mitigation	Improbable	Low Probability	Probable	Highly Probability	Definite
Significance (S) is determined by combining the above criteria in the following formula:	$[S = (E + D + R + M) \times P]$ $Significance = (Extent + Duration + Reversibility + Magnitude) \times Probability$				

- [1] Impacts that arise directly from activities that form an integral part of the Project.
- [2] Impacts that arise indirectly from activities not explicitly forming part of the Project.
- [3] Secondary or induced impacts caused by a change in the Project environment.
- [4] Impacts are those impacts arising from the combination of multiple impacts from existing projects, the Project and/or future projects.
- [5] The definitions given are for guidance only, and not all the definitions will apply to all the environmental receptors and resources being assessed. Impact significance was assessed with and without mitigation measures in place.

IMPACT SIGNIFICANCE RATING					
Total Score	**4 to 15**	**16 to 30**	**31 to 60**	**61 to 80**	**81 to 100**
Environmental Significance Rating (Negative (-))	**Very low**	**Low**	**Moderate**	**High**	**Very High**
Environmental Significance Rating (Positive (+))	**Very low**	**Low**	**Moderate**	**High**	**Very High**

5.3 Impact Significance Rating for the Identified Impacts

Table 5-3 presents the potential environmental and social impacts and their significance rankings. The impact significance without mitigation measures is assessed using design controls in place. The residual impact is what remains following the application of mitigation and management measures and is thus the final level of impact associated with development. Residual impacts also serve as the focus of management and monitoring activities during project implementation to verify that the actual impacts are the same as those predicted in this report.

Figure 5- 3: Construction phase impacts and their ratings

Aspect	**Impact**	**Nature**	**Impact Assessment Criteria and Scoring**						**Significance**	**Significance**
			Impact Magnitude	*Impact Extent*	*Impact Reversibility*	*Impact Duration*	*Probability of Occurrence*	*Significance*	**(Before Mitigation)**	**(After Mitigation)**
Air Quality	Dust and particulate emissions	Negative	3	2	3	2	3	30	**High**	**Very Low**
	Increase in combustion emissions	Negative	3	2	3	2	2	20	**Low**	**Very Low**
Noise and Vibration	Increase in construction noise levels	Negative	3	2	3	2	4	40	**High**	**Low**
	Risk of vibration	Negative	2	1	3	2	2	16	**High**	**Very Low**
Surface Water	Storm water runoff and increase in flooding	Negative	3	2	3	2	2	20	**Moderate**	**Very Low**
	Decrease in surface water quality	Negative	1	1	1	1	2	8	**Very Low**	**Very Low**
	Disruption of surface drainage	Negative	1	1	1	1	1	4	**Moderate**	**Very Low**
Groundwater	Decrease in groundwater quantity due to water use	Negative	1	1	1	1	1	4	**Very Low**	**Very Low**

Aspect	Impact	Nature	Impact Assessment Criteria and Scoring						Significance	Significance
			Impact Magnitude	*Impact Extent*	*Impact Reversibility*	*Impact Duration*	*Probability of Occurrence*	*Significance*	**(Before Mitigation)**	**(After Mitigation)**
	Decrease in groundwater quality due to leachate/spills from fuel storage areas.	Negative	1	1	1	1	2	8	**Very Low**	**Very Low**
Waste	Poor waste disposal practices	Negative	3	2	3	2	4	40	**Moderate**	**Low**
Soils and Land Capability	Increase Soil erosion	Negative	1	1	1	1	2	8	**Moderate**	**Very Low**
	Risk of soil compaction	Negative	1	1	1	1	1	4	**High**	**Very Low**
	Soil contamination	Negative	2	2	3	4	2	22	**Low**	**Very Low**
Terrestrial Biodiversity	Direct loss and disturbance of natural habitat and associated flora SCC	Negative	2	2	3	2	2	18	**Low**	**Very Low**
	Establishment and spread of AIS	Negative	2	1	3	2	1	8	**Very Low**	**Very Low**
	Loss and fragmentation of faunal habitat	Negative	2	2	1	2	1	7	**Very Low**	**Very Low**
Heritage	Conflict in perception of value of heritage resources	Negative	1	1	1	1	1	4	**Very Low**	**Very Low**
	Chance-find of cultural resources	Negative	3	2	5	5	2	30	**Low**	**Very Low**
Visual	Potential visual intrusion resulting from large construction vehicles and equipment	Negative	2	2	3	2	2	18	**Low**	**Very Low**

Aspect	Impact	Nature	Impact Assessment Criteria and Scoring						Significance	Significance
			Impact Magnitude	*Impact Extent*	*Impact Reversibility*	*Impact Duration*	*Probability of Occurrence*	*Significance*	**(Before Mitigation)**	**(After Mitigation)**
	Potential visual effect of construction laydown areas and material stockpiles.	Negative	2	2	3	3	3	30	**Low**	**Very Low**
Traffic	Impact of construction vehicles on roads and access roads	Negative	1	2	3	1	2	14	**High**	**Very Low**
	Deterioration of the surrounding road network due to an increase of traffic around the site	Negative	2	2	3	1	2	16	**High**	**Very Low**
	Transportation of abnormal loads	Negative	2	2	3	1	1	8	**High**	**Very Low**
Social	Economic impacts	Positive	3	3	3	2	4	44	**Moderate**	**High (+)**
	Creation of employment opportunities	Positive	3	2	3	2	4	40	**Moderate**	**High (+)**
	Artisanal skill development	Positive	3	2	5	4	4	56	**Moderate**	**High (+)**
	Disruption on provision of education services	Negative	4	2	3	2	4	44	**Moderate**	**Low**
	Community, health, and safety risk	Negative	4	2	3	4	4	52	**Moderate**	**Low**
	Increased risk to diseases, STIs and HIV and AIDS	Negative	4	3	5	5	4	68	**High**	**Moderate**
	Disruption of sanitary management due to demolition	Negative	4	3	5	5	4	70	**High**	**Very High (+)**

Aspect	Impact	Nature	Impact Assessment Criteria and Scoring						Significance	Significance
			Impact Magnitude	*Impact Extent*	*Impact Reversibility*	*Impact Duration*	*Probability of Occurrence*	*Significance*	**(Before Mitigation)**	**(After Mitigation)**
	of the incinerator used by female students									
	Land acquisition and population displacement	Negative	1	1	1	1	1	4	**Very Low**	**Very Low**
	Health and safety of site personnel	Negative	4	2	5	5	4	64	**High**	**Low**
	Influx / in-migration by jobseekers	Negative	2	2	1	2	2	14	**Very Low**	**Very Low**
	GBV and sexual exploitation and abuse	Negative	4	2	3	2	4	44	**Moderate**	**Low**
	Increased Incidences of child labour	Negative	4	3	5	5	4	68	**High**	**Low**

Figure 5- 4: Operation phase impacts and their ratings

Aspect	Impact	Nature	Impact Assessment Criteria and Scoring						Significance	Significance
			Impact	*Impact Extent*	*Impact*	*Impact Duration*	*Probability of Occurrence*	*Significance*	**(Before Mitigation)**	**(After Mitigation)**
Air Quality	Dust and particulate emissions	Negative	1	1	1	1	1	4	**Very Low**	**Very Low**
Noise and Vibration	Increase in noise levels	Negative	2	1	3	1	4	28	**Low**	**Low**
Surface Water	Storm water runoff and increase in flooding	Negative	3	2	3	1	3	27	**Low**	**Very Low**
	Decrease in surface water quality	Negative	3	2	3	2	2	20	**Low**	**Very Low**
	Disruption of surface drainage	Negative	1	1	1	1	1	4	**Very Low**	**Very Low**
Waste	Pollution due to poor waste disposal	Negative	3	2	2	2	4	36	**Moderate**	**Low**
Soils and Land Capability	Soil degradation	Negative	1	1	1	1	1	4	**Very Low**	**Very Low**
Terrestrial Biodiversity	Establishment and spread of AIS	Negative	1	1	1	1	1	4	**Very Low**	**Very Low**

Aspect	Impact	Nature	Impact Assessment Criteria and Scoring						Significance	Significance
			Impact	*Impact Extent*	*Impact*	*Impact Duration*	*Probability of Occurrence*	*Significance*	(Before Mitigation)	(After Mitigation)
Visual	Improved outlook of the institutions	Positive	4	3	3	4	5	70	**High**	**Very High (+)**
Social	Promotion of teaching and training of labour market relevant skills	Positive	4	3	5	5	4	68	**High**	**Very High (+)**
	Creation of employment opportunities	Positive	4	4	3	4	4	60	**Moderate**	**High (+)**
	Increase skills transfer to female students due to increased enrolment of female students	Positive	4	3	5	4	5	80	**High**	**Very High (+)**
	Increased risk of spread of diseases e.g. STIs and HIV and AIDS	Negative	4	3	3	5	3	45	**Moderate**	**Low**
	Accidents and injuries to learners and staff	Negative	4	2	3	4	4	52	**Moderate**	**Low**
	Cases of theft	Negative	3	2	3	2	4	40	**Moderate**	**Low**
	Increased conflict of energy and water use due to high demand	Negative	4	2	3	4	2	26	**Low**	**Very Low**

Figure 5- 5: Decommissioning phase impacts and their ratings

Aspect	**Impact**	**Nature**	**Impact Assessment Criteria and Scoring**						**Significance**	**Significance**
			Impact Magnitude	*Impact Extent*	*Impact Reversibility*	*Impact Duration*	*Probability of Occurrence*	*Significance*	**(Before Mitigation)**	**(After Mitigation)**
Air Quality	Dust and particulate emissions	Negative	4	2	3	1	3	30	**Low**	**Low**
Noise	Increase in construction noise levels	Negative	4	2	3	1	3	30	**Low**	**Low**
Surface Water	Contamination and runoff	Negative	4	2	5	5	3	48	**Moderate**	**Low**
	Disruption of surface drainage	Negative	4	3	5	5	3	51	**Moderate**	**Low**
Groundwater	Decrease in groundwater quality due to hydrocarbon spills from moving equipment	Negative	4	3	5	2	3	42	**Moderate**	**Low**
Waste	Poor waste disposal practices	Negative	3	2	3	2	4	40	**Moderate**	**Low**
	Land degradation due to Soil erosion	Negative	4	2	3	4	3	39	**Moderate**	**Low**

Aspect	Impact	Nature	Impact Assessment Criteria and Scoring						Significance	Significance
			Impact Magnitude	*Impact Extent*	*Impact Reversibility*	*Impact Duration*	*Probability of Occurrence*	*Significance*	**(Before Mitigation)**	**(After Mitigation)**
Soils and Land Capability	Land degradation due to Soil compaction	Negative	3	2	3	3	3	33	**Moderate**	**Low**
	Land degradation due to Soil contamination	Negative	2	2	3	4	3	33	**Moderate**	**Low**
Terrestrial Biodiversity	Establishment and spread of AIS	Negative	2	3	5	3	3	39	**Moderate**	**Low**
Visual	Potential visual scarring of the landscape because of site clearance and earthworks	Negative	4	2	3	5	3	42	**Moderate**	**Low**
Traffic	Disruption of local traffic due to construction vehicles on roads and access roads	Negative	3	2	3	2	3	30	**Low**	**Low**

5.4 Description of Identified Impacts

This section describes the potential positive and negative environmental and social impacts associated with the construction and operation of the project. The section is organised by the stake of the project life cycle, which includes construction and operation.

5.4.1.1 Positive Impacts

Positive social impacts

a) Creation of employment opportunities

Cause: The planning and design phases provided employment to consultants for the preparation of location plans, detailed layout plan site plans, and building plans for the proposed infrastructure and ancillary buildings. Another team was engaged in the environmental impact assessments.

Enhancement Measures:

- The University will offer works contracts to Contractors and Consultants who will employ people.
- Ensure that the consultant employed has a good gender representation of at least 40:60.
- Ensure that the consultants are in line with the labor laws of Malawi.

5.4.2 Impacts During Construction Phase

Cause: Activities that will be carried out during this phase will include land clearing, landscaping, grading, excavation, compacting, trenching, construction of service infrastructure such as access roads, construction of a workers' camp which will provide storage facilities and an office facility, backfilling with compaction consolidation, levelling and earth marking, transportation of building materials, and other infrastructure such as drainage and utility reticulation.

5.4.2.1 Positive Impacts during construction phase

Positive Social impacts during construction phase

a) Creation of employment opportunities

Cause: The project will require over 100 people to work cumulatively in different sections of the project during the construction phase. The Project will create job opportunities for skilled and unskilled labour forces.

Enhancement Measures:

- The University will offer work contracts to Contractors and Consultants who will employ Malawians.
- Engage an unskilled labour force from surrounding communities, including women and youth.
- Ensure a 40:60 employment ratio, as stipulated in the Gender Act.
- Designate an appropriate site within the project area to sell food items to local communities.
- Pay above minimum wage.
- Provide written employment contracts to labourers, stipulating daily, hourly, or task-based wages.

b) Skills transfer to local community

Cause: Both casual labourers and skilled labour force will be employed to carry out construction activities of the different infrastructure of the project. In this process, the different categories of people who will be employed in the project will acquire additional skills.

Enhancement measure: The Contractor will:

- Implement structured training programs to equip local workers with skills relevant to construction activities.
- Provide reference letters to workers after successful contract completion.

c) Creation of market for goods and services in the project area

Cause: The Project creates a market for both goods and services in the project area. These include food items and construction materials such as cement. This will, in a way, stimulate informal and formal sectors of the economy in project areas.

Enhancement measure: The Contractor will:

- Prioritize suppliers of goods and services from the project areas preference over suppliers of goods and services from elsewhere
- Designate an area as a market close to the project site.

5.4.2.2 *Negative Social Impacts During Construction Phase*

The project generates several negative impacts during the construction phase. The impacts are outlined in the paragraphs below, and the Contractor will be required to prepare Environmental and Social Rules for their operations.

a) Increased cases of accidents and incidences to workers due to construction works

Cause: During construction, construction workers are expected to be at a high risk of accidental injuries and hazards due to the handling of hazardous waste and equipment. Because of intensive engineering and construction activities, including erection and fastening of roofing materials, metal grinding and cutting, concrete work, steel erection, and welding, construction workers are at risk of accidents and injuries.

Mitigation Measure: The Contractor will:

- Engage only workers trained to operate specific machines and equipment.
- Instal proper signage on-site to warn workers of safety requirements regarding machines with moving parts and other equipment on-site.
- Provide a First Aid box and have a trained person to handle site emergencies and incidences.
- Display site telephone numbers for ambulances or provide a site vehicle to specifically transport the injured to the hospital.
- Provide firefighting mechanisms on-site. Display emergency call numbers that can be used in case of a site fire (provide fire detection and alarm system throughout the building, dedicated fire water tank with backed up pumping station, and hydrant and hose reel points throughout the building).
- Contractor will need to develop and implement an Occupational Health and Safety Plan.
- Provide safe scaffolding and railings at different heights.
- Provide washing (enclosed bathrooms) and toilet facilities at sites with both drinking and washing water. The number of workers engaged deter KUHeS number of the toilets and bathrooms provided.
- Contractors should consider opening another road near the Mzimba road for easy access of construction workers and transferring of materials to the site.
- Use well-maintained equipment by qualified personnel.
- Different types of PPE will be provided to all workers in accordance with the nature of the work being performed.

- The Contractor will provide workers' compensation in line with the provisions of the Compensation Act of 2000.
- Use KUHeS Gate 3 for entry and exit. However, the preferred option is to use entry from main road which the concert will be sourced from the city council (Mzimba Street)
- Restrict and isolate construction site from the access area by students and the University staff
- Issue notices/advisories of pending traffic inconveniences and solicit tolerance by residents before commencement of construction work.
- Should transport construction materials off-peak traffic hours as far as possible This reduces the risk of traffic congestion and road accidents on roads leading to the site.

b) Increased labour influx

Cause: Construction activities for the project have a greater potential to trigger labour influx impacts. This is because people from distant places flock to project sites in search of employment and business opportunities. Their presence in project areas may have negative impacts on host communities. Annex 8 provides details of the labour influx management plan.

Mitigation measures:

- Develop a labor influx management plan.
- As much as possible, the camp site for the contractor will need to be sited outside the campus to avoid close interaction between the students, staff, and workers for the contractor.
- Prohibit employment of workers at the gate but rather follow formal channels of recruitment.

c) Increased cases of illicit behavior and crime

Cause: The influx of workers into project areas may increase the risk of illicit behaviour and the rate of crimes and/or a perception of insecurity by local community members. Such illicit behaviours or crimes can include theft, gender-based violence, physical assaults, substance abuse, prostitution, and human trafficking. Local law enforcement may not be sufficiently equipped to deal with temporary increases in local population.

Mitigation measure: The Contractor will:

- Employ most of the unskilled workforce from local communities who already have homes within the project area and therefore live with their families.
- Integrate migrant workers and local communities by engaging local chiefs in conducting awareness and sensitisation meetings with their community members to ensure mutual and equal access to existing socioeconomic opportunities.
- Contractor should have their own guards on the premises, and Identity cards should also be introduced for their workers
- Provide separate unique uniform to the contractor for easy identification in case of any theft or related cases;
- Migrant workers should not be allowed access to the hostels and classes to avoid theft cases;
- As much as possible, the camp site for the contractor will need to be sited outside the campus to avoid close interaction between the students, staff and workers for the contractor.
- Deploy social security staff and regular engagement of the police in the project areas to ameliorate occurrence of mischiefs; and
- Sensitise workers and local community members on security matters.

d) Increased cases of HIV and AIDS infections

Cause: The influx of people may bring communicable diseases into the project area. These diseases may include Sexually Transmitted Infections (STIs), including HIV and AIDS.

Mitigation measures: The Contractor shall:

- Sensitize all employs and the community at large on the dangers of contracting HIV and AIDS and STI and their prevention measures such as abstinence.
- As much as possible, the camp site for the contractor will need to be sited outside the campus to avoid close interaction between the students, staff and workers for the contractor; and
- Ensure the availability of free condoms.

e) Increased cases of injuries and loss of lives to communities

Cause: Construction sites usually pose occupational health and safety and probable risks to community members and learners in project areas. Such injuries come from the use of heavy machinery and equipment and falling and flying objects.

Mitigation measure: The Contractor shall:

- Keep staff and students and any unauthorized persons away from construction sites and dangerous zones by fencing off the site.
- Contractor should consider opening another road near the Mzimba road for easy access of construction workers and transferring of materials to the site.
- Install warning signs (written in English and local languages) at strategic sites.
- Train all workers on proper use and handling of equipment.
- Implement regular health screening for workers e.g., COVID-19 and other communicable diseases and provide measures for treatment of positive cases.
- Supply PPEs for prevention of spread of communicable diseases e.g., COVID-19;
- Distribute condoms and other prevention measures for HIV and AIDs; and
- Place signposts indicating “Danger equipment” “Pedestrian walking”, “No parking”, “Stop” etc. shall be placed in critical areas on the project site.

f) Increase in Visual Intrusion

Cause: A construction site is not a pleasant site to look at because of construction work such as excavation, stockpiling of materials, and mixing of concrete. The large quantities of dust generated during this period contribute to reducing the aesthetic value of the land.

Mitigation measure: The Contractor will:

- Screen-off (barricading) the construction site.
- Consider having a green design with more landscape features.
- The design should blend with the existing buildings for easy uniformity of the structures.
- Provide good landscaping and spaces for students to relax outside the classroom and for group discussions within the landscape areas.
- Construct a senior common room which can be used by postgraduates and lecturers.
- Provide good labeling of the facilities e.g., campus map, fire exit, emergency numbers etc.
- Provide sufficient signage related to construction work.

g) Increased demand for sanitary facilities

Cause: Lack or inadequate provision of toilets for use by workers can lead to ad hoc defaecation in secluded areas or structures on the site, thus creating unsanitary conditions and sources of fly infestation. This can threaten the health of the lecturers, students, and workers. Indiscriminate sewage

disposal can also result in the contamination of the underground/surface water resources of (Lilongwe River) water resources.

Mitigation measure: The Contractor will:

- Provide adequate sanitary facilities for workers with at least a ratio of one sanitary facility to 15people and should be gender segregated, e.g., portable chemical toilets with appropriate sanitary arrangement, to prevent increased bacterial loading to runoff;
- Increasing number of toilets connected to system meeting the anticipated demand of the building; and
- Sensitise workers on the rationale for using sanitary facilities.

h) Disruption of teaching and learning activities at the University

Cause: Noise and vibration which will disturb teaching and learning at the University, will be caused using machinery in construction work, especially excavation of soils. Some noise also arises from vehicles delivering construction materials and workers. This has the potential to disturb the surrounding communities and disturb the University's teaching and learning activities.

Mitigation measures: The Contractor will:

- Minimise the use of heavy machinery during the construction phase of the project.
- Erect screens around construction sites to mitigate disturbances.
- Scheduling construction activities during the day (07:00 am to 05:00 pm).
- Enforce speed limits for vehicles delivering construction materials to minimise noise.
- Instruct workers to avoid noise.
- Site Houlding of the facility to prevent noise pollution and disturbances of classes;
- Use of separate entrance and exit points from those being used by the current learning activities
- Use of new and modern machinery; and
- Use of well-serviced machinery fitted with silencers, such as diesel generators.

i) Increased cases of Gender Based Violence (GBV)

Cause and Comments: It is anticipated that construction of the facility at the University may trigger several GBV issues in the project area due to different socioeconomic factors. Construction workers and other project staff will have extra disposable income that may lead to harassment and molestation of women in general, specifically their wives. Likewise, some women working at the project site may harass their unemployed husbands because of increased disposable income. Female workers may also be harassed by male workers at project sites in the form of abusive language, physical or psychological harassment, sexual advancement, and demands. Some community members may be harassed by project employees in the same manner. Rape cases involving employees and community members can also occur.

Mitigation measures: The Contractor will:

- Orient workers on the GBV issues.
- Hire GBV service provider.
- Ensure that all workers sign the code of conduct developed by the project; and
- Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to conduct GBV awareness campaigns around the project area.

j) Increased cases of Sexual harassment

Cause and Comments: It anticipated that the construction of a facility at KUHeS may trigger several sexual harassment issues in the project area due to different socioeconomic factors. Construction workers and other project staff will have extra disposable income that may lead to harassment and sometimes molestation of women in general and specifically their wives. Likewise, some women working at the project site may harass their unemployed husbands, due to increased disposable incomes. Female workers may also be harassed by the male workers at the project sites in form of abusive language and physical or psychological harassment and sexual advancement and demands. Some of the community members may also be harassed in the same manner by project employees. Rape cases involving employees and community members may also occur.

Mitigation measures: The Contractor will:

- Orient workers on the sexual harassment issues.
- Hire GBV service provider.
- Ensure that all workers sign the code of conduct developed by the project; and
- Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out sexual harassment awareness campaigns around the project area.

k) Increased cases of Sexual Exploitation Abuse (SEA)

Cause and Comments: The risk of sexual exploitation during the construction project at KUHeS could stem from a mix of social and economic weaknesses and differences in power. Workers and staff involved in the project, especially those with more money, might use their advantage to take advantage of vulnerable people such as women and those who are marginalised. This exploitation could involve pressuring people to engage in sexual activities or making them do things for money. The way society and workplaces view men and women might also make it simpler for exploitation to occur

Mitigation measures: The Contractor will:

- Orient workers on the Sexual Exploitation and Abuse issues.
- Hire GBV service provider.
- Ensure that all workers sign the code of conduct developed by the project; and
- Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out sexual exploitation and abuse awareness campaigns around the project area.

l) Increased cases of domestic violence and disruption to marriages

Cause and Comments: It is anticipated that construction of the facility at KUHeSmay trigger several domestic violence and marriage breakdown issues in the project area due to different socioeconomic factors. Construction workers and other project staff will have extra disposable income that may lead to harassment and sometimes molestation of women in general and specifically their wives. Likewise, some women working at the project site may harass their unemployed husbands, due to increased disposable incomes. Female workers may also be harassed by the male workers at the project sites in form of abusive language and physical or psychological harassment and sexual advancement and demands. Some of the community members may also be harassed in the same manner by project employees. Rape cases involving employees and community members may also occur.

Mitigation measures: The Contractor will:

- Orient workers on Domestic Violence and Marriage Breakdown Management issues.
- Ensure that all workers sign the code of conduct developed by the project; and

- Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out domestic violence and marriage breakdown awareness campaigns around the project area.

m) Increased cases of child and forced labour

Cause and Comments: Evidence has shown that child labour is mostly engaged by subcontractors, sometimes with the aid of the community in pursuit of benefits. Contractors are also known to recruit under-aged children to carry out certain tasks, mostly short-term casual work, in offsite work areas. Sometimes, Contractors and subcontractors can support suppliers of materials who directly engage child labour in the production of raw materials supplied to the project. In view of this, the probability that some Contractors or subcontractors may be engaged or involved in this illegal act is high.

Mitigation measures: The Contractor will:

- Orient the Contractor and community members on child safety management.
- Prohibit employment of children at the project site; and
- Coordinate with the District Officer, Gender, Children, and Social Welfare and Ministry of Labour and the Police Department to conduct sensitization meetings with local chiefs, project administration, children, and community members on prohibition of any form of child labour and need to promote children's rights.

n) Increased Risks of Fire

Cause: Moderate welding work will be carried out on-site for decking works, roofing, repairing broken down machines, or vehicles, which increases the chances of fire outbreak.

Mitigation Measures: The Contractor will:

- Provide adequate amount of appropriate firefighting equipment.
- Post 'No smoking signs' where flammable materials will be stored.
- Site selection for welding workshop to be done taking into consideration proximity to flammable materials.
- Carry out risk assessment for welding works to identify activities that cannot happen concurrently in one area e.g. avoid welding works close to painting works.
- Organise inspection and maintenance of fire equipment at least once over a period of six months.
- Train staff on the use of available firefighting equipment and evacuation procedures.
- Train at least one person on handling firefighting techniques who will be available throughout the construction phase of the project.
- Develop and post at the site, fire emergency and evacuation procedures; and
- Maintain on-site telephone contact for fire brigades.

o) Increased pressure on existing water supply and energy supply

Cause: A considerable amount of fresh water is required during construction works, particularly for use by construction workers (washing), cement mixing, and wetting of the site to control dust. This may place some strain on the water supply and may exacerbate the shortage of water supply experienced within the vicinity.

Mitigation Measures: The Contractor will:

- Provide adequate water storage reservoirs at the construction site to meet project needs during periods of high external demand and refill the tanks during periods of low demand (e.g. late at night).

- Contract will have a temporary water connection from Lilongwe Water Board
- Use for construction activities water from the permitted river.
- Engage water supply tankers in case of total supply failure; and
- Implement appropriate water conservation measures.

p) Increased cases of Covid-19

Cause and Comments: Due to overcrowding during the construction phase, activities may increase the chances of contracting Covid-19.

Mitigation measures: The Contractor will:

- Sensitize workers and community members to the dangers of Covid – 19.
- Train workers and community members on preventive measures for Covid – 19.
- Procure facilities for Covid-19 management.
- Distribute masks to workers.
- Enforce wearing masks, always washing hands with soap, and no handshaking on workers and students.
- Develop shifts for workers to ensure that only a few workers are in the workplace per day.
- Observance of physical distance and limiting the sharing of working tools.
- Medical personnel to test workers on Covid-19; and
- Send workers who show signs and those who tested positive for Covid – 19 into isolation for 14 days, until they were confirmed to be negative.

q) Increased risk of spread of Cholera amongst workers

Malawi has experienced outbreak of Cholera in the recent months which has claimed a lot of lives

Mitigation measures: The contractor will:

- Ensure that workers are vaccinated against Cholera.
- Practice personal hygiene to prevent Cholera; and
- Distribute Information, Education and Communication (IEC) materials on Cholera prevention.

5.4.3 *Negative Environmental Impacts During Construction Phase*

a) Air Pollution and deterioration due to dust emissions

Cause: During the construction phase, the air quality is expected to decline because of an increase in the levels of fugitive dust from excavation works, stockpiled earth materials, dusty roads, and concrete mixing. Respirable particulates are a public health hazard and may otherwise create considerable nuisances to the public. This is expected to be a short-term, reversible impact that lasts only for the duration of the construction activity.

Mitigation Measures: The Contractor will:

- Covering all haulage vehicles carrying sand, aggregate, and cement.
- Wet and cover with tarpaulin during windy conditions for all stockpiles of fine materials (e.g. sand and ballast).
- Wet all access roads and exposed ground in a manner and at a frequency that effectively keeps down dust.
- Issue all workers in dusty areas on site with dust masks during dry and windy conditions.
- Provide appropriate enclosure for the concrete mixer; and
- Use of dust nets at high building levels

b) Increased noise pollution due to construction works

Cause: Although not expected to have a significant negative impact, the use of vehicular activities and heavy equipment during construction and building works will inevitably generate noise, which may create a nuisance for nearby residents, particularly immediate neighbours. Although annoying, this negative impact will be short-term (limited to the construction phase). Noise beyond a certain level is itself a nuisance and needs to be avoided. Such noise emissions should be minimised as much as possible from the source point through appropriate measures.

Mitigation Measures: The Contractor will:

- Restrict noisy construction activities to normal working hours (7:30 am – 4:30 pm).
- Inform residents beforehand, via notices and advisories, of pending noisy periods, solicit their tolerance well before the commencement of piling works and limit the idling time for trucks and equipment to 5 minutes and apply a common-sense approach to machine use.
- Equip workers operating equipment that generate noise with noise protection gear including earmuffs and plugs. Workers operating equipment that generates noise levels greater than 80 dBA continuously for 8 hours or more should use earmuffs, whereas those experiencing prolonged noise levels of 70 – 80 dBA should wear earplugs.
- Regularly inspect and service all construction equipment; and
- Fit construction vehicles with silencers to reduce the noise.

c) Soil degradation due to soil erosion

Cause: Site preparation, vegetation clearance, and excavations using heavy construction equipment usually expose soils in affected areas and leave them vulnerable to erosion by heavy rainfall and surface runoff. Improper locations of stockpiles of sand, gravel, cement, etc., at the construction site could also cause fine materials to be washed into the drainage system during heavy rainfall events. This would not only represent a waste of materials but would also contribute to the blockage of drainage systems. Siltation may also cause damage to aquatic habitats in streams around the project site.

Mitigation Measures: The Contractor will:

- Stage site clearance works to minimize the area of exposed soil at any given time.
- Re-cover exposed soils with grass and other ground cover as soon as possible.
- Store and protect topsoil which will be reused for rehabilitation of the site.
- Monitor areas of exposed soil during periods of heavy rainfall throughout the construction phase of the project to ensure that any incidents of erosion are quickly controlled.
- Level the project site to reduce run-off velocity and increase infiltration of storm water into the soil.
- Build physical barriers to prevent mass movement where necessary.
- Properly controlling and managing stockpiled construction materials. Fine-grained materials (sand, marl, etc.) should be stockpiled away from surface drainage channels and features.
- Place low bumps around the piles of sand.
- Use tarpaulin to cover open piles of fine-grained materials (sand, marl, etc.) to prevent them from being washed away when it rains heavily.
- Identify safe storage areas; and
- Deliver materials onsite in instalments.

d) Soil degradation due to soil contamination

Cause: All types of motorised equipment, from generators to trucks, requiring fuel, lubrication, and maintenance will be used at the construction site. Many of these can also be fitted with lead batteries. Spillage of hazardous materials on the ground surface has the potential to contaminate the soil.

Mitigation Measures: The Contractor will:

- Ensure no refueling or maintenance of large vehicles at the construction site.
- Store and place all hazardous materials in appropriately bunded containers and concrete floors.
- Maintain spill-response kits at the site office.
- Prepare and display on site spill response procedures; and
- Train workers on spill response and management.

e) Water pollution

Cause: All sorts of motorised equipment, from generators to trucks, requiring fuel, lubrication and maintenance will be used at the construction site. Many will also be fitted with lead batteries. The spillage of hazardous materials on the ground surface has the potential to contaminate both surface and underground water. In the case of surface water contamination, the result is likely to be a threat to aquatic habitats in the streams around the project site.

Mitigation Measures: The Contractor will:

- ensure no refueling and maintaining large vehicles at the construction site.
- Store and place all hazardous materials in appropriately bunded containers and on concrete floor.
- Maintain spill response kits at the site office.
- Prepare and display on site spill response procedures; and
- Train workers on spill response and management.

f) Soil pollution due to poor solid waste management

Cause: Considerable volumes of solid waste will be generated during site preparation and construction works, which would include some vegetation and typical construction waste such as wasted concrete, steel, wooden scaffolding and forms, pulp and polythene bags, and waste earth materials. This waste will negatively impact the aesthetic value of the site and surrounding environments if not properly managed and disposed at an approved dumpsite. Solid waste, if allowed to accumulate on the ground, can cause localised pooling and flooding. Water pooling, in turn, creates conditions conducive to the breeding of nuisance and health-threatening vectors, such as mosquitoes. Improper management of construction waste has a negative short-term impact.

Mitigation measures: The Contractor will:

- Prepare a site waste management plan before commencement of construction activities. This should include the designation of appropriate waste storage areas, collection and removal schedules, identification of approved disposal sites, and a system for supervision and monitoring.
- Implement a site waste management plan under the supervision of an independent monitor.
- Pay special attention to minimising and reducing the quantities of solid waste produced during site preparation and construction; and
- Prohibit burning any vegetation and combustible waste on the site.

5.3.3 Impacts during demobilisation

There is a need to demolish temporary structures that will be used for storerooms and accommodations for some construction workers. Construction rubble and waste must be cleared from the site in readiness for the operation phase of the project.

5.3.3.1 Positive environmental impacts during demobilization phase

a) Reduced air pollution due to reduced dust emissions

Cause: Cessation of construction work can contribute to reduced dust emissions, thereby contributing to reduced disturbance to surrounding communities.

Enhancement measure(s): The Contractor will:

- Carry out soft and hard landscaping after construction work to reduce the risks of further dust emissions.
- Carry out landscaping with the aim to create earth embankments and levelled areas (by working with the landscape to ensure minimal costly excavation and groundwork, using the existing topography to maximise the entrances to the building, possibly at different levels, and understanding the relationship of the design to future potential development and connections between them).
- Consider biophilic design principles which aim to provide tangible connectivity to the natural environment using direct nature, indirect nature, and space and place conditions.

b) Reduced noise pollution

Cause: Heavy machinery and 100 construction workers left the site, thereby reducing the amount of noise generated at each project site.

Enhancement measures:

- The Contractor removes all working and damaged construction equipment from the sites.

5.3.3.2 Negative social Impacts during demobilization phase

a) Loss of Employment for workers

Cause: At the end of construction work, the Contractor will lay off workers involved in construction work. This will result in a loss of employment and a reduced income capacity for people to be laid off. The impact is negative, occurs, and is of low significance.

Mitigation measure: The Contractor will:

- Provide workers with adequate notice of employment termination.
- Provide appropriate terminal benefits to workers.
- Empower workers and enhance their employability by fostering the development of appropriate knowledge and skills
- Pay workers all their dues to minimise wages disputes after termination of employment; and
- Sensitise workers and students on prudent investments in their earnings while working.

b) Loss of business opportunities

Cause: Local traders selling construction materials lose their sources of income and livelihood. Small-scale businessmen and women selling foodstuffs and fruits to construction workers also lose their source of income.

Mitigation measures: The Contractor will:

- Inform local traders of the project duration in time; and
- Pay for all materials obtained on loan on time.

c) Increased generation of solid waste

Cause: Various construction activities and demolished structures at construction sites will generate waste that will include construction and broken planks, which will be removed from the sites during the demobilisation phase.

Mitigation measure: The Contractor will:

- Arrange community members in the project areas to find a suitable site for disposal of construction waste.
- Use the 3Rs (Reduce, Re-use and Recycle) principle for the different types of wastes; and
- Revegetate and landscape all the areas cleared of solid wastes.

5.4.4 Impacts during operation phase

During the operation phase, the new University infrastructure will be occupied and used by both students and academic and non-academic members of staff. The University is likely to expand once new infrastructure becomes operational.

5.4.4.1 Positive Impacts during operation phase

Positive social impacts during operation phase

a) Increase students' intake at the University

Cause: Currently, the demand for education in the country far outstrips existing learning institutions and facilities. With the construction of new additional teaching and office complexes, there will be an increased number of classrooms and office spaces at the University, which will in turn assist in increasing enrolment and employment of both academic and non-academic staff members.

Enhancement measure: The University will:

- Employ more academic and non-academic staff members.
- Continuously maintain the infrastructure to keep it in good shape to facilitate teaching and learning; and
- Diversify the number of courses to be offered at the University.

b) Creation of employment opportunities

Cause: Employment opportunities are the long-term impact of this expansion of the University expansion. The University is expected to increase its teaching and non-teaching staff once expansion activities are completed, as it is expected to increase student enrolment. With increased intake, teaching and non-teaching staff are bound to increase.

Enhancement Measures: The University will:

- Employ more Malawians where skills and more qualified Malawians are available for both academic and non-academic members of staff and from the community members around the University for ground labourers and office assistants; and
- Give equal employment opportunities for both men and women by ensuring that at least 40% of the employees should be women.

c) Improved teaching and learning at the University

Cause: With the construction of an additional teaching complex with well-furnished laboratories and ICT equipment, lecturers will have an opportunity to improve the teaching of different subjects in a more effective way, thereby improving the performance of learners.

Enhancement measure: The University will:

- Provide the necessary equipment to facilitate teaching and learning.
- Sound proofing be considered in the lecture theatres and the public hub in order to avoid disruption, since the University will also be used by the public.
- Utilise the building flyers and corridors that have good lighting and shielding as excellent study areas or for small group discussions.
- Outside teaching and outdoor study spaces provided to enhance teaching and learning environment.
- Recruit well qualified academic and non-academic members of staff; and
- Maintain all the equipment and infrastructure to be used for the teaching and learning.

a) Enhanced visual outlook of the University

Cause: Construction of the teaching complex and OdeL hub will enhance the visual outlook of the University.

Enhancement measure: The University will:

- Consider having a green design with more landscape features
- The design should blend with the existing buildings for easy uniformity of the structures
- Provide good landscaping and spaces for students to relax outside the classroom and for group discussions within the landscape areas
- Construct a senior common room which can be used by postgraduates and lecturers.
- Provide good labelling of the facilities e.g. campus map, fire exit, emergency numbers etc
- The designs should have enhanced ventilation and use of natural lighting (consider eco-designs and big windows)
- Ensure that the design of the buildings have security features e.g. alarm, fire escape system.

b) Enhanced safety of the students

Cause: Construction of the teaching complex and OdeL hub will enhance the safety of students, as the facility will eliminate most of the health and safety risks associated with the existing buildings which had no any safety considerations;

Enhancement measure: The University will:

- Ensure that the building includes emergency fire exit provisions, separate from elevators, to mitigate potential casualties in the event of a fire. Ensure that the buildings are disability friendly by providing ramps and elevators for a. Ensure designs that incorporate non-slippery floors, avoiding materials such as slippery porcelain tiles commonly found in public places, to ensure safety. Additionally, prioritise easy-to-clean and maintain flooring solutions.
- Provide safe stairs and which can easily be used not posing safety risks

c) Enhanced management of student's properties

Cause: Construction of the teaching complex and OdeL hub will enhance the safety of students' belongings, as most of them stay outside the campus.

Enhancement measure: The University will:

- Provide lockable facilities (lockers) for individual students to store their items (as the University has students who stay off campus and face challenges in keeping their belongings during the day and examination times). Most of them tend to keep their bags in the lecturers' offices.
- Provide large office facilities for lecturers and lockable cabinets.

5.4.4.2 ***Negative Impacts during operation phase***

Negative social impacts during operation phase

a) Increased demand for water and energy supply

Cause: Once construction activities are finalised, the new infrastructure will lead to increased pressure on existing infrastructure, such as roads, piped water, and other utilities, such as electricity. The proposed brief for the building is to provide high levels of thermal comfort, with an emphasis on clinical areas, while also providing a sustainable design. The key sustainability design concepts following a Lean, Mean, Green approach include **Lean**: Optimised solar shading to minimise the active cooling required while still achieving levels of natural daylight orientation of building and space planning to harness diffuse natural daylight, promote natural cross ventilation, and use of external and semi-external spaces to minimise fan and cooling energy. **Mean**: Where mechanical ventilation is required use high efficiency plant located close to the rooms served to reduce energy. Rainwater harvesting for flushing toilets and irrigation systems (where required) combined with low flow water fittings to minimise potable water use. Utilise solar panels to generate significant proportion of building electrical demand and consider use of batteries storage and/or private wire connection to utilise excess energy generated during summer months • **Green:** Utilise solar panels to generate significant proportion of building electrical demand and consider use of batteries storage and/or private wire connection to utilise excess energy generated during summer months The design philosophy from here follows on to a building first sustainability principle.

Mitigation measures: The University will:

- Instal water-conserving automatic taps and toilets as well as energy-saving electrical fittings to optimise the use of public resources. The designs have shades to dramatically improve thermal comfort during the entire year. This also facilitates the use of passive and semi-active cooling strategies to minimise energy consumption. These transitional spaces allow people to adapt to different spaces with different thermal conditions while they are going in and out to avoid thermal shock.
- Install a backup generator in case of any power failures e.g. in the morgue.
- Fix any water leaks through damaged pipes and faulty taps promptly by a licensed plumber.
- Use of flat roof where solar energy will be installed.
- Additionally, flat roofs should provide a provision for the future expansion of additional floors on the top.
- Sensitise the occupants of the offices and teaching facilities and library to conserve energy and water; and
- Monitor water and energy use to set targets for their efficient use.

b) Increased risk of road accidents

Cause: The number of vehicles within the area is likely to increase owing to the increased number of students and teaching and non-teaching staff, which may lead to congestion on the roads to the campus.

Mitigation measure: The University will:

- Place at the vicinity of the entrance to the site appropriate traffic warning signs instructing

occupants and visitors to reduce speed.

- Contractor should consider opening another road near the Mzimba road for easy access of construction workers and transferring of materials to the site.
- Have a construction camp site outside the campus.
- Contractor will need to develop and implement an Occupational Health and Safety Plan.
- The site has a challenging topography, hence the deigns need to have raised walkways connecting the buildings through stairs and ramps,
- Instruct security guards to control traffic along the private road leading to the University and assist vehicles as they enter and exit the University.
- Maintain a record of incidents and accidents on the roads leading to the campus.
- Develop an emergency response procedure and develop and display at the entrance to the campus; and
- Display contacts of emergency service providers including breakdown vehicle and traffic police at the main entrance to the University.

Negative environmental impacts during operation phase

d) a) Soil pollution due to the generation of solid waste and hazardouss material (for example. Biomedical Waste)

Cause: There will be an increased number of students and staff at the University, with increased space due to additional teaching and office complexes. The increased number of workers and learners will result in an increased generation of waste at the University. The quantity of solid waste generated by the operation of a university is expected to be significant. Such waste includes empty plastic containers, cartons, waste papers, plastic bags, and e-waste. Improper management of solid waste will result in aesthetic degradation and the breeding of disease vectors. A Waste Management Plan is presented in Appendix 11. Additionally, Laboratories, particularly anatomy laboratory, produce various types of hazardous and biomedical waste, including chemical reagents, biological specimens, and medical equipment. Improper handling, storage, and disposal of these wastes can pose serious health and environmental risks, including the contamination of soil, water, and air.

Mitigation Measures: The University will:

- Contract a private waste handler who is licensed by EAD for waste disposal.
- Use the 3Rs (Reduce, Re-use and Recycle) principle for the different types of wastes.
- Project will construct temporary waste storage facility as the project will increase number of people on campus.
- Provide a separate system for management of health care waste separate from the general waste from the building i.e. including biomedical waste, dirty and clean areas, waste handling and storage, exhaust systems, material types for surfacing and benches, floors.
- Provide a waste storage area within the facility for handling biomedical waste and at minimum should be provided with impervious surface, designed for cleaning, disinfection with available water supply, well secured, proper lighting, and ventilation, segregated from food supply areas, and provision for protective equipment storage site.
- Develop Standard operating procedures for management of biomedical waste.
- Provide access and restricted control measures in high-risk areas.
- Increase number of toilets (connected to sewer system) to match the demand and projections for the students.
- Segregate wastes by providing different bins for each type of waste;
- KUHeS shall ensure that hazardous and biomedical waste is disposed of in accordance with local regulations and best practices, such as through authorized waste management facilities or specialized treatment methods (e.g. autoclaving and chemical treatment).

- Providing comprehensive training and education programs for laboratory staff and students on proper waste management practices, including waste segregation, labelling, and disposal procedures, to minimize the risk of environmental contamination and health hazards; and
- Maintaining dumping sites identified during construction.

b) Water Pollution due to generation of liquid waste

Cause: Once a different infrastructure is operational, the project is expected to generate large amounts of effluent into the environment. Proper management of the effluent will ensure a clean environment for residents of this area. The University has its own sewage system, and the new infrastructure connects the existing sewer lines. The siting of the project is away from the existing sewer line which was already relocated by other development projects within the campus.

Mitigation measures:

- The University will dispose of effluent from the new infrastructure through the existing sewer lines.
- Provide a separate wastewater treatment system for management of health care waste separate from the general waste from the building i.e. including biomedical waste.

c) Injuries and loss live and properties due to fires

Cause: The project building will be multistorey. Each building is at risk of catching fire for various reasons.

Mitigation measures:

- The project shall need to be designed to have an emergency exit leading to the outside of the building and should be accessible by everyone.
- Installation of smoke alarms and sprinkler systems.
- Develop an emergency response plan which will also specify training requirements.
- Maintenance of all fire safety systems in proper working order, including self-closing doors in escape routes and ventilation ducts with fire safety flaps.
- Training of staff for operation of fire extinguishers, carry out routine fire drills and evacuation procedures.
- Development of facility fire prevention or emergency response and evacuation plans with adequate guest information (this information should be displayed in obvious locations and clearly written in relevant languages).
- Perform firefighting training and have a contract to conduct routine fire drills.
- Place fire control measures appropriately as per requirement of the Lilongwe City Assembly laws.
- Properly label fire exit doors within a building.

e) Increases cases of STIs including HIV and AIDS

Cause: It is anticipated that the increased intake at college will attract more learners, staff, and other businesspeople to the area. Interactions between these different groups within and between them would result in sexual encounters that could increase the likelihood of spreading HIV and AIDS.

Mitigation measures:

- Develop and implement an HIV and AIDS policy and a prevention, treatment, care and support programme;
- Sensitise staff and learners on HIV and AIDS prevention;
- Free condoms to be made available to staff; and

- Distribution of information, education and communication (IEC) materials on STIs including HIV and AIDS.

f) Increased demand for water

Cause and Comment: Traditionally, modern buildings have high demand and usage of resources, mainly electricity and water. Water consumption is related to personal use and the facility requirements for housekeeping, laundry, cooking, and ground maintenance.

Mitigation measures:

- Install water-saving equipment, including ultra-low-flush toilets, spray nozzles, urinals, faucet aerators, and low-flow showerheads, and pressure-control valves;
- Design water storage reserves for the new building; and
- Post notices to encourage the sparing use of water.

Chapter Six: Environmental and Social Management Plan

This Chapter presents the project's Environmental and Social Management Plan (ESMP). The ESMP aims to define and structure the measures to be implemented to mitigate or optimise the potential impacts of the project identified in Chapter 5. Responsibilities and costs are presented for each measure. On a larger scale, the ESMP establishes responsibilities for the implementation and oversight of the proposed environmental and social management measures. Responsibilities are shared among several stakeholders, including the relevant ministerial authorities, Contractors, and coordinating units.

The ESMP also provides guidelines for a comprehensive monitoring plan which will ensure adequate implementation of the proposed environmental and social management measures on an ongoing basis. Thus, the Plan will facilitate ongoing adjustments to the initial mitigation/optimisation measures within an adaptive management approach. The ESMP also provides orientations for training and capacity-building requirements for successful implementation.

6.1 Environmental and Social Management and Monitoring Plan

An Environmental and Social Management and Monitoring Plan has been developed to assist the SAVE PIU and KUHeS in mitigating and managing environmental impacts associated with the life cycle of the proposed construction of the teaching complex and OdeL hub at Lilongwe campus. Monitoring involves a routine check of the progress of implementation and the resultant effects on the environment as the project progresses. These shall be checked against their effectiveness in reducing negative impacts or enhancing the benefits identified in this report. Monitoring procedures will comprise formulations of enforceable contractual terms to ensure that Contractors implement the ESMP. The environmental and social monitoring plan has been designed to cover all the potential impacts, verifiable indicators, frequency of monitoring, responsible organisations for carrying out the monitoring and those for receiving the reports. The environmental and social monitoring plan provides monitoring to check the implementation of the enhancement and mitigation measures proposed in the ESMP. Key factors and processes may change throughout the life of the project, and considerable provisions have been made for the dynamism and flexibility of the ESMP. As such, the ESMP is subject to a regular periodic review regime during project implementation.

Using best practices in other parts of the world, the costs of mitigation measures and of the institutional and training requirements to implement them will be estimated with a budget of approximately 2.5% of the total project cost. The implementation of mitigation measures for this plan is expected to cost MK71,500,000 during the construction phase and operation phase. The monitoring cost for the construction phase is estimated to be MWK 25,850,000.00.

Table 6-1 shows the environmental and social management and monitoring plan for the planning, design, construction, and operational phases of the proposed project. In general, the tables outline the potential environmental and social risks associated with the project and detail all necessary mitigation measures, their financial costs, and the institutions responsible for their implementation. The ESMP will be used as a checklist for environmental and social audits.

Table 6- 1: Environmental and Social Management and Monitoring Plan for Construction of a teaching complex and OdeL hub at Lilongwe campus

S/N	Potential Impact	Enhancement / Mitigation Measures	Performance Indicator	Target	Means of Verification	Frequency	Monitoring agency	Responsible Institution - Management	Cost of Implementation	Cost of monitoring
1	**Planning – Positive Impacts**									
1.1	**Positive Social Impacts during planning phase**									
1.1.1	Creation of employment opportunities	· Employ qualified professionals to do preparatory specialised technical works.	Percentage of preparatory specialised technical works performed by qualified professionals.	100%	Monthly progress reports	Annually	Labour Office	KUHeS	Nil	500,000.00
		· Ensure that the consultant employed have a good gender representation of at least 40:60 gender representation.	Percentage of either gender employed.	60%						
		· Ensure that they consultant are in line with the labour laws of Malawi.	Compliance rate with Malawi labour laws for consultants.	100%						
2	**Construction – Positive Impacts**									
2.1	**Positive Social impacts during construction phase**									
2.1.1	Creation of employment opportunities and business opportunities	· The University will offer the works contracts to Contractors and Consultants who will employ Malawians.	Percentage of Malawian s employees to be hired by Contractors and Consultants	50%	Monthly progress reports	Annually	Labour Office	-KUHeS	1,000,000.00	500,000.00
		· Ensure 40:60 employment ration as stipulated in the gender act.	Percentage of either gender employed	60%						
		· Designate an appropriate site within the project area for selling food items by local communities.	Percentage of local food vendors operating at designated site.	40%		· Quarterly				
		· Pay above minimum wage.	Percentage of employees paid above the minimum wage.	100%						

		· provide written employment contracts to labourers stipulating their daily/hourly or task-based wage.	Percentage of labourers with written wage contracts.	100%						
2.1.2	Skill transfer to local communities	· Implement structured training programs to equip local workers with additional skills relevant to construction activities.	· Number of structured training programs for local workers in construction-related skills.	four trainings per year	Monthly progress reports	Throughout the construction phase	Labour Office	- KUHeS	1,000,000.00	500,000.00
		· Provide reference letter to workers after successful completion of their contracts	Percentage of workers receiving reference letters upon contract completion.	100%						
2.1.3	Creation of market for goods and services in the project area	· Prioritise suppliers of goods and services from the project areas preference over suppliers of goods and services from elsewhere.	Percentage of goods/services sourced locally versus from outside the project area.	50%	Monthly progress reports	Throughout the construction phase	Labour Office	· District Council	Nil	500,000.00
		· Designate an area as a market close to the project site	Percentage of goods/services sourced locally versus from outside the project area.	50%						
3	**Construction – Negative Impacts**									
3.1	**Negative Social Impacts during construction phase**									
3.1.1	Increased cases of accidents and incidences to workers due to construction work	Engage only those workers that are trained to operate specific machines and equipment.	Number of workplace related accidents and illnesses	0 cases	Monthly progress reports	Throughout the construction phase	Department of Occupational Health and Safety	· KUHeS	1,000,000.00	300,000.00
		Install proper signage on site to warn workers of safety requirements as regards machines with moving parts and other equipment at site.	Percentage of the presence of safety signage for machinery and equipment at the worksite to all places signs have to be installed.	100% of the sites with signage						
		· Provide a First Aid box and have a trained person to handle site emergencies and incidences. Display site telephone numbers of ambulances or	Number of stocked First Aid boxes, trained personnel for emergencies, and displayed	Once daily						

		provide a site vehicle to specifically transport the injured to hospital.	emergency contact information at each worksite.							
		· Provide fire-fighting mechanism at site. Display emergency call numbers that can be used in case of a site fire (provide fire detection and alarm system throughout building, dedicated fire water tank with backed up pumping station and hydrant and hose reel points throughout building).	Number of fire-fighting mechanisms and displayed emergency call numbers on site.	Once daily						
		· Provide safe scaffoldings and railings at heights.	Percentage of safe scaffoldings and railings installed at heights on site.	100%						
		· Provide washing (enclosed bathroom) and toilet facilities at site with both drinking and washing water. The number of workers engaged deter KUHESs the number of the toilets (connected to sewer system) and bathrooms provided.	Percentage of enclosed bathroom and toilet facilities provided at the site, adjusted based on the number of workers engaged.	100%						
		· Using well-maintained equipment by qualified personnel.	100% of equipment to be maintained by qualified personnel.	100%						
		· Different types of PPE will be provided to all workers in accordance with the nature of the work being performed.	Percentage of workers provided with appropriate Personal Protective Equipment (PPE) based on the nature of their tasks.	100%						

		· The Contractor will be to provide workers' compensation in line with the provisions of the Compensation Act 2000.	Percentage of injured workers compensated in accordance with the Compensation Act 2000, reflecting effective provision by the Contractor.	100%						
		· Use gate 3 for entry and exit. However, the preferred option is to use entry from main road which the concert will be sourced from the city council (Mzimba Street)	Percentage of entry and exit through Gate 3 and the main road entry from Mzimba Street.	100%						
		· Restrict and isolate construction site from the access area by students and the University staff	Percentage of implemented measures to restrict and isolate the construction site from access by students and University staff.	100%						
		· Issue notices/advisories of pending traffic inconveniences and solicit tolerance by residents before the commencement of construction works.	Number of pre-construction notices issued to residents regarding traffic inconveniences.	At least four times a year						
		Contractor will need to develop and implement an Occupational Health and Safety Plan.	One OHS plan developed and implement	One						
		· Should as far as possible, transport of construction materials off-peak traffic hours. This will reduce the risk of traffic congestion and of road accidents on the roads leading to the site	Percentage of construction materials transported during off-peak traffic hours to mitigate traffic congestion and road accidents.	100%						

3.1.2	Increased labour influx	· Prohibit employment of workers at the gate but rather follow formal channels of recruitment.	percentage of unskilled workers employed from within project area	100%	Monthly progress reports	Quarterly	Labour Office	KUHeS	2,000,000.00	300,000.00
		Develop a labour influx management plan	Number of labour influx management plan developed and implemented	One						
3.1.3	Increased cases of illicit behaviour and crime	· Sensitise the workers and the local community members on security matters and site the workers camp outside the campus	Number of sensitisation meetings per month	Once per month	Monthly progress reports	Monthly	District Social Welfare Office	· • KUHeS	1,000,000.00	350,000.00
		· Integrate migrant workers and local communities by engaging local chiefs to conduct awareness and sensitisation meetings with their community members to ensure mutual and equal access to existing socio-economic opportunities.	Number of sensitisation meetings per month	Once per month						
		· Deploy social security staff and regular engagement of the police in the project areas to ameliorate occurrence of mischiefs;	Number of security interface meeting between Contractor and police per month	Once per month						
		The guards and workers should be provided with unique uniforms for easy identification and should be provided with identity cards	Percentage of workers with IDs and provided with unique uniforms	100%						
3.1.4	Increased cases of HIV and AIDS infections	· Sensitise all employs and the community at large on the dangers of contracting HIV and AIDS and STI and their prevention measures such as abstinence;	Percentage of employees and community sensitised on HIV, AIDS, and STIs	100%	Monthly progress reports	Bi-annually	District Environmental Health Office	· KUHeS	2,000,000.00	350,000.00
		· Ensure availability of free condoms	Availability of free condoms on-site.	100% available						

3.1.5	Increased cases of injuries and loss of lives to communities	· Keep staff and students and any unauthorised persons away from construction sites and dangerous zones by fencing off the site.	Percentage of construction site perimeter fenced to deter unauthorised access.	100%	Monthly progress reports	Monthly	District Environmental Health Office	· KUHeS	5,000,000.00	300,000.00
		· Install warning signs (written in English and local languages) at strategic sites.	Percentage of strategic sites with warning signs in English and local languages installed.	100%						
		· Train all workers on proper use and handling of equipment.	Percentage of workers trained on proper use and handling of equipment	100%						
		· Implement regular Carry out health screening for workers e.g., COVID-19 and other communicable diseases and provide measures for treatment of positive cases.	Percentage of workers undergoing regular health screening for communicable diseases, with measures in place for treatment of positive cases.	100%						
		· Provide Supply PPEs for prevention of spread of communicable diseases e.g., COVID-19;	Percentage of workers supplied with PPEs for prevention of communicable diseases.	100%						
		· Distribute Provide condoms and other prevention measures for HIV and AIDs; and	Percentage of workers provided with condoms and other HIV/AIDS prevention measures.	100%						
		· Place signposts indicating "Danger equipment" "Pedestrian walking", "No parking", "Stop" etc. shall be placed in critical areas on the project site.	Percentage of critical areas on the project site with signposts indicating "Danger equipment", "Pedestrian walking", "No	100%						

			parking", "Stop", etc							
3.1.6	Increase in Visual Intrusion	· Screen off (barricading) the construction site.	Percentage of the construction site perimeter screened off or barricaded.	100%	Monthly progress reports	During onset of construction works	Environmental Office from City Council	· KUHeS	Nil	150,000.00
		· Provide enough signage related to construction works.	Percentage of construction works area covered by signage.	100%						
3.1.7	Increased demand for sanitary facilities	· Provide adequate sanitary facilities for workers with at least a ratio of one sanitary facility to 15people and should be gender segregated, e.g., portable chemical toilets with appropriate sanitary arrangement, to prevent increased bacterial loading to runoff	Ratio of workers to gender-segregated sanitary facilities meeting the 1:15 requirement.	one toilet per 15 employees	Monthly progress reports	During onset of construction works	Environmental Office from City Council	· Developer	Cost included inder construction works	200,000.00
		· Sensitise workers on the rationale of using the sanitary facilities	Percentage of workers sensitised on the importance of using sanitary facilities.	100%						
3.1.8	Disruption of teaching and learning activities at the University	· Minimise use of heavy machinery during construction phase of the project.	Percentage decrease in heavy machinery usage during the construction phase of the project.	100%	Monthly progress reports	During onset of construction works	University Secretariat	· KUHeS	2,000,000.00	500,000.00
		· Screen off the construction sites. Erect screens around construction sites to mitigate disturbances.	Percentage of construction sites with erected screens to mitigate disturbances.	100%						

		· Scheduling Carry out construction activities during the within the daytime (07:00 am to 05:00 pm).	Percentage of construction activities conducted within daytime hours (07:00 am to 05:00 pm).	100%							
		Limit Enforce speed limits for of vehicles delivering construction materials as a way of minimising noise.	Percentage of construction material delivery vehicles complying with enforced speed limits to minimise noise.	100%							
		· Instruct Advise workers not to make noise.	Percentage of workers adhering to instructions to minimise noise.	100%							
		· Use of separate entrance and exit points from those being used by the current learning activities	Percentage of construction activities with separate entrance/exit points from current learning activity routes.	100%							
		· Use of new and modern machinery.	Percentage of construction activities utilising new and modern machinery.	100%							
		· Use of well serviced machinery fitted with silencers for example diesel generators.	Percentage of machinery fitted with silencers after servicing.	100%							
3.1.9	Increased cases of Gender Based Violence (GBV)	· Orient workers on the GBV issues.	Percentage of workers oriented on Gender-Based Violence (GBV) issues.	100%	Monthly progress reports	Bi Annually	Social Welfare office	· KUHeS	20,500,000.00	400,000.00	
		· Ensure that all workers sign the code of conduct developed by the project.	Percentage of workers who have signed the project's code of conduct.	100%							

		· Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry GBV awareness campaigns around the project area.	Number of GBV awareness campaigns conducted in project area in coordination with district offices and police.	100%						
3.1.10	Increased cases of Sexual harassment	· Orient workers on the sexual harassment issues.	Percentage of workers oriented on sexual harassment issues.	100%	Monthly progress reports	Annually	Social Welfare office	· KUHeS	2,500,000.00	400,000.00
		· Ensure that all workers sign the code of conduct developed by the project.	Percentage of workers who have signed the project's code of conduct.	100%						
		· Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out sexual harassment awareness campaigns around the project area	Number of sexual harassment awareness campaigns conducted in the project area with district offices and police coordination.	Once per month						
3.1.11	Increased cases of Sexual Exploitation Abuse (SEA)	· Orient workers on the Sexual Exploitation and Abuse issues.	Number of workers oriented on Sexual Exploitation and Abuse (SEA) issues.	Once per month	Monthly progress reports	Annually	Social Welfare office	· KUHeS	2,500,000.00	1,000,000.00
		· Ensure that all workers sign the code of conduct developed by the project	Percentage of workers who have signed the project's code of conduct.	Once per month						
		· Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out sexual exploitation and abuse awareness campaigns around the project area.	Number of sexual exploitation and abuse awareness campaigns conducted in the project area with coordination from district offices and police.	Once per month						

3.1.12	Increased cases of domestic violence and disruption to marriages	· Ensure that all workers sign the code of conduct developed by the project; and	cases of domestic violence and disruption to marriage	Zero cases	Monthly progress reports	Annually	Social Welfare office	· KUHeS	2,000,000.00	1,000,000.00
		· Coordinate with the District Office of Gender, Children, and Social Welfare and the Police Department to carry out domestic violence and marriage breakdown awareness campaigns around the project area.	Number of domestic violence and marriage breakdown awareness campaigns conducted in the project area in coordination with district offices and police.	Zero cases	Monthly progress reports					
3.1.13	Increased cases of child and forced labour	· Orient the Contractor and community members on child safety management.	Number of orientation sessions conducted for the Contractor and community members on child safety management.	Once per month	Monthly progress reports	Bi-annually	Social Welfare office	· KUHeS	3,000,000.00	300,000.00
		Prohibit employment of children at the project site;	Absence of children employed at the project site.	Zero cases	Monthly progress reports					
		· Coordinate with the District Officer, Gender, Children, and Social Welfare and Ministry of Labour and the Police Department to conduct sensitisation meetings with local chiefs, project administration, children, and the community members on prohibition of any forms of child labour and need to promote children's rights.	Number of sensitisation meetings conducted on child labour prohibition and children's rights promotion, coordinated with relevant authorities.	Once per month	Monthly progress reports					

3.1.14	Increased Risks of Fire	· Provide adequate number of appropriate firefighting equipment.	Number of firefighting equipment per risky areas	Once per month	Monthly progress reports	During construction period	Department of Fire services – Lilongwe City Council	KUHeS	3,000,000.00	300,000.00
		· Post 'No smoking signs' where flammable materials will be stored.	Number of "No smoking" signs posted at locations storing flammable materials.	At least one sign per each hotspot						
		· Organise for inspection and maintenance of fire equipment at least once in a period of six months.	Number of fire equipment inspections and maintenance conducted every six months.	At least one per each hotspot						
		· Train staff on the use of the available firefighting equipment as well as evacuation procedures.	Number of staff trained on the use of firefighting equipment and evacuation procedures.							
		· Train at least one person on handling firefighting techniques who will be available through-out the construction phase of the project.	Number of persons trained in firefighting techniques who will be available throughout the construction phase of the project.	100%						
		• Site selection for welding workshop to be done taking into consideration proximity to flammable materials. Risk assessment for welding works to identify activities that cannot happen concurrently in one area e,g avoid welding works close to painting works	Percentage of times a job Safety assessment is done for welding works	100%						
		· Develop and post at the site, fire emergency and evacuation procedures	Number of fire emergency and evacuation procedures	At least one per each hotspot						

			developed and posted at the site.							
		· Maintain on site telephone contacts for fire brigade	Presence of on-site telephone contacts for the fire brigade.							
3.1.15	Increased pressure on existing water supply and energy supply	· Provide adequate water storage reservoirs at the construction site to meet Project needs during periods of high demand externally and refill the tanks during periods of low demand (e.g., late at night).	Number of water use conflicts / complaints registered	0	Monthly progress reports	During construction phase	KUHeS EDO	KUHeS	Cost included inder construction works	300,000.00
		· Contract will have a temporary water connection from Lilongwe Water Board	Percentage compliance with the provision of a temporary water connection from Lilongwe Water Board as specified in the contract.	100%						
		· Use for construction activities water from the surrounding river.	Percentage of water used for construction activities sourced from the surrounding river.	100%						
		· Engage water supply tankers in case of total supply failure,	Percentage of time water supply tankers are engaged in case of total supply failure.	100%						
		· Implement appropriate water conservation measures.	Percentage of implemented water conservation measures.	100%						
3.1.16	Increased cases of Covid-19	· Sensitise workers and community members on the dangers of Covid - 19.	Number of workers and community members sensitised on the	100%	Monthly progress reports	Quarterly	District Environmental Health Office	KUHeS	2,000,000.00	500,000.00

			dangers of COVID-19.							
		· Train workers and community members on preventive measures of Covid - 19.	Number of workers and community members trained on preventive measures for COVID-19.	100%						
		· Procure facilities for Covid-19 management.	Number of COVID-19 management facilities procured	100%						
		· Distribute masks to workers.	Percentage of workers provided with masks.	100%						
		· Enforce wearing masks, washing hands with soap at all the times and no handshaking on the workers and students.	Number of cases registered	0						
		· Develop shifts for workers to ensure that only a few workers are at the workplace per day.	Percentage of workers following the shift schedule to limit the number present at the workplace per day.	100%						
		· Observance of physical distance as well as limiting the sharing of work tools.	Number of cases registered	0						
		· Medical personnel to test workers on Covid-19; and	Number of workers tested for COVID-19 by medical personnel.	100%						
		· Send workers who show signs and those who test positive for Covid - 19 into isolation for 14 days until they are confirmed to be negative	· Implementation of isolation protocol for workers showing signs or testing positive for COVID-19	100%						

3.1.17	Cases of Cholera	- Ensure that workers are vaccinated against Cholera Practice personal hygiene to prevent Cholera.	Percentage of workers vaccinated in prevention of Cholera Health promotion awareness campaign carried out	100% Once per quarter	Monthly progress reports	During construction phase	KUHeS EDO	KUHeS	Cost included inder construction works	300,000.00
4	**Negative environmental Impacts during construction phase**									
4.1.1	Air Pollution and deterioration due to dust emissions	· Cover all haulage vehicles carrying sand, aggregate and cement.	Percentage of haulage vehicles carrying sand, aggregate, and cement covered during transportation.	100%	Monthly progress reports	Ongoing	Environmental Office from City	· KUHeS	5,000,000.00	1,000,000.00
		· Wet and cover with tarpaulin during windy conditions all stockpiles of fine materials (e.g., sand and ballast).	Percentage of stockpiles of fine materials (e.g., sand and ballast) wetted and covered with tarpaulin during windy conditions.	100%						
		· Wet all access roads and exposed ground in a manner and at a frequency that effectively keeps down the dust.	Wetting of access roads and exposed ground to control dust.	100%						
		· Issue all workers in dusty areas on the site with dust masks during dry and windy conditions.	Percentage of workers in dusty areas provided with dust masks during dry and windy conditions.	100%						
		· Provide appropriate enclosure for the concrete mixer;	Percentage of concrete mixers provided with appropriate enclosure.	100%						
		· Use of dust nets at high levels of the building.	Percentage of high levels of the building covered with dust nets.	100%						

4.1.2	Increased noise pollution due to construction works	· Restrict noisy construction activities to normal working hours (7:30 am - 4:30 pm).	Number of days construction works done from 7 am to 5 pm per week	Daily	Monthly progress reports	Weekly	Environmental Officer from Lilongwe City Council	· KUHeS	2,000,000.00	2,000,000.00
		· Inform residents beforehand, via notices and advisories, of pending noisy periods, solicit their tolerance well before the commencement of piling works and limit the idling time for trucks and equipment to 5 minutes and apply a common-sense approach to machine use	Percentage compliance with advance notification to residents, limiting idling time, and common-sense approach to machine use.	100%						
		· Equip workers operating equipment that generate noise with noise protection gear including earmuffs and plugs. Workers operating equipment generating noise levels greater than 80 dBA continuously for 8 hours or more should use earmuffs whereas those experiencing prolonged noise levels of 70 - 80 dBA should wear earplugs.	Percentage of workers operating noisy equipment provided with appropriate noise protection gear (earmuffs or earplugs) based on noise level thresholds.	100%						
		· Regularly inspect and service all construction equipment; and	Percentage of construction equipment regularly inspected and serviced.	100%						
		· Fit construction vehicles with silencers to reduce the noise	Percentage of construction vehicles fitted with silencers to reduce noise.	100%						
4.1.3	Soil degradation due to soil erosion	· Stage site clearance works to minimise the area of exposed soil at any given time.	Percentage of site clearance works staged to minimise the area of exposed soil at any given time.	100%	Monthly progress reports	Ongoing	Environmental Office from City	· KUHeS	2,000,000.00	1,000,000.00

		· Re-cover exposed soils with grass and other ground cover as soon as possible.	Percentage of exposed soils re-covered with grass and other ground cover in a timely manner.	100%						
		· Monitor areas of exposed soil during periods of heavy rainfall throughout the construction phase of the project to ensure that any incidents of erosion are quickly controlled.	Percentage of exposed soil areas monitored during heavy rainfall to promptly control erosion.	100%						
		· Level the project site to reduce run-off velocity and increase infiltration of storm water into the soil.	Percentage of project site levelled to reduce runoff velocity and increase stormwater infiltration into the soil.	100%						
		· Build physical barriers to prevent mass movement where necessary.	Percentage of necessary areas with physical barriers constructed to prevent mass movement.	100%						
		· Properly control and manage stockpiling construction materials. Fine-grained materials (sand, marl, etc.) should be stockpiled away from any surface drainage channels and features.	Percentage compliance with proper management of stockpiling construction materials, ensuring fine-grained materials are kept away from surface drainage channels.	100%						
		Store and protect topsoil which will be reused for rehabilitation of the site.	Percentage of topsoils stockpiled and used for rehabilitation	100%						

		· Place low bumps around the piles of sand.	Number of low bumps placed around sand piles.	100%						
		· Use tarpaulin to cover open piles of fine-grained materials (sand, marl, etc.) to prevent them from being washed away when it rains heavily.	Percentage of open piles of fine-grained materials covered with tarpaulin to prevent wash away during heavy rain.	100%						
		· Identify safe storage areas	Percentage of safe storage areas identified.	100%						
		· Deliver materials on site in instalments	Percentage of materials delivered on site in instalments.	100%						
4.1.4	Soil degradation due to soil contamination	· No refuelling and maintaining large vehicles at the construction site.	· Percentage compliance with the absence of refuelling and maintenance of large vehicles at the construction site.	100%	Monthly progress reports	Ongoing	Environmental Office from City	· KUHeS	2,500,000.00	1,000,000.00
		· Store and place all hazardous materials in appropriately bunded containers and on concrete floor.	Percentage of hazardous materials stored and placed in appropriately bunded containers and on concrete floors.	100%						
		· Maintain spill response kits at the site office.	Percentage compliance with maintenance of spill response kits at the site office.	100%						
		· Prepare and display on site spill response procedures	Percentage of on-site spill response procedures prepared and displayed.	100%						
		· Train workers on spill response and management	Percentage of workers trained on spill response and management.	100%						

4.1.5	Water pollution	· No refuelling and maintaining large vehicles at the construction site.	Percentage of large vehicles not refuelled or maintained at the construction site.	100%	Monthly progress reports	Weekly	Environmental Office from City	· KUHeS	2,000,000.00	500,000.00
		· Store and place all hazardous materials in appropriately bunded containers and on concrete floor.	Percentage of equipment approved to be fit for working onsite	100%						
		· Maintain spill response kits at the site office.	Number of times spill response kits maintained at the site office.	100%						
		· Prepare and display on site spill response procedures.	Percentage compliance with the preparation and display of on-site spill response procedures.	100%						
		Provide a separate wastewater treatment system for management of health care waste separate from the general waste from the building i.e. including biomedical waste	Number of separate systems for management of general wastewater and biomedical waste	Two separate systems						
		· Train workers on spill response and management	Percentage of workers trained on spill response and management.	100%						
4.1.6	Soil pollution due to poor solid waste management	· Prepare a site waste management plan prior to commencement of construction activities. This should include designation of appropriate waste storage areas, collection and removal schedule, identification of approved disposal site, and a system for supervision and monitoring.	Percentage of construction activities with a site waste management plan prepared before commencement.	100%	Monthly progress reports	Weekly	Environmental Office from City	· KUHeS	2,000,000.00	500,000.00
		· Implement a site waste management plan under the supervision of the independent monitor.	Percentage compliance with the implementation of a site waste management plan	100%						

			under independent monitor supervision.							
		· Pay special attention to minimising and reducing the quantities of solid waste produced during site preparation and construction.	Percentage of solid waste quantities minimised and reduced during site preparation and construction activities.	100%						
		· Not burning any vegetation and combustible waste on the site.	Percentage of time no vegetation and combustible waste burned on the site.	100%						
5	**Impacts during demobilisation**									
5.1	**Positive environmental impacts during demobilisation phase**									
5.1.1	Reduced air pollution due to reduced dust emissions	· Carry out soft and hard landscaping after construction works to reduce risks of further dust emissions.	Percentage of soft and hard landscaping completed after construction works to reduce risks of further dust emissions.	100%	Monthly progress reports	during offset of constructio n works	Environmental Office from City	· KUHeS	1,500,000.00	200,000.00
		Landscaping will aim at creating earth embankments and levelled areas (through working with the landscape to ensure minimal costly excavation and groundworks, using groundworks, using the existing topography to maximise the entrances to the building, possibly at different levels, and understanding the relationship of the design to future potential development and connections between these).	Percentage of landscaping completed with earth embankments and levelled areas, considering future development connections.	100%						

		· Consider biophilic design principals which aims to provide a tangible connectivity to the natural environment using direct nature, indirect nature, and space and place conditions	Percentage of implementation of biophilic design principles.	100%						
5.1.2	Reduced noise pollution	· The Contractor will remove all working and damaged construction equipment from the sites.	Percentage of removal of operational and damaged construction equipment from the sites by the Contractor.	100%	Monthly progress reports	during offset of constructio n works	Environmental Office from City	· KUHeS	1,000,000.00	1,000,000.00
6	**Negative social Impacts during demobiliszation phase**									
6.1.1	Loss of Employment for workers	· Provide workers with adequate notice of termination of employment.	· Percentage of workers provided with adequate notice regarding termination of employment.	100%	Monthly progress reports	ongoing	Labour Office	· KUHeS	2,500,000.00	1,000,000.00
		· Provide appropriate terminal benefits to workers.	Percentage of workers provided with appropriate terminal benefits.	100%						
		· By the time appropriate knowledge and skills would have been developed to empower workers and increase their employability Empower workers and enhance their employability by fostering the development of appropriate knowledge and skills	Percentage of workers being enhanced employability through skill development.	100%						
		· Pay workers all their dues to minimise wages disputes after termination of employment.	Percentage of workers receiving full payment of dues to minimise wage disputes post-employment.	100%						
		· Sensitise workers and students on prudent investment of their earnings whilst working	Number of training sessions conducted on prudent	Once a month						

			investment of earnings for workers and students.							
6.1.2	Loss of business opportunities	· Inform local traders of the project duration in time; and	Number of notices issued to local traders regarding the project duration.	One signage per local trading centre	Monthly progress reports	during offset of constructio n works	District Council	· KUHeS	Nil	500,000.00
		· Pay for all materials that were obtained on loan in time	Percentage of materials obtained on loan paid for in a timely manner.	100%						
	Increased generation of solid waste	· Arrange with the community members in the project areas to find a suitable site to dispose construction waste.	Number of meetings held with community members to identify a suitable site for construction waste disposal.	Once per month	Monthly progress reports	quarterly year	Environmental Office from City	· KUHeS	500,000.00	500,000.00
		· Use the 3Rs (Reduce, Re-use and Recycle) principle for the different types of wastes.	Number of implementations made of the 3Rs principle for different types of waste.	100%						
		· Revegetate and landscape all the areas cleared of solid wastes.	Percentage of cleared areas revegetated and landscaped after solid waste removal.	100%						
7	**Positive Impacts during operation phase**									
7.1	**Positive social impacts during operation phase**									
7.1.1	Increase students' intake at the University	· Employ more academic and non-academic members of staff.	· Number of employed academic and non-academic members of staff	One per each program	Annual Progress report	Annually	University Council	· KuHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		· Continuously maintain the infrastructure to keep it in good shape to facilitate teaching and learning.	Number of instances of infrastructure malfunction.	Zero case						
		Tran students to students to take up	Number trainings per year students	Once per year for						

		ownership of the new structure when it comes to taking care of the property	are trainings in good practices in management of infrastructure	each cohort						
		· Diversify the number of courses to be offered at the University	Number of new courses introduced at the University within a specified timeframe.	Depending on demand						
7.1.2	Creation of employment opportunities	· Employ more Malawians where skills and more qualified Malawians are available for both academic and non-academic members of staff and from the community members around the University for ground labourers and office assistants; and	Number of employed academic and non-academic members of staff.	One per each program	Annual Progress report	Annually	University Council	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		· Give equal employment opportunities for both men and women by ensuring that at least 40% of the employees should be women	Percentage of female employees in the workforce, aiming for a minimum of 40%.	40%						
7.1.3	Improved teaching and learning at the University	· Provide the necessary equipment to facilitate teaching and learning.	Percentage of required equipment provided for teaching and learning needs.	100%	Annual Progress report	Annually	University Council	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		· Sound proofing be considered in the lecture theatres and the public hub to avoid disruption, since the University will also be used by the public.	Assessment of sound levels within lecture theatres and public hubs before and after implementation of soundproofing measures, with a target reduction in decibels (dB).	Once per year						

		· Utilise the building flyers and corridors that have good lighting and shielding as excellent study areas or for small group discussions.	Percentage of time building foyers and well-lit corridors are utilised for study or small group discussions during peak study hours.	100%							
		· Outside teaching and outdoor study spaces provided to enhance teaching and learning environment.	Number of outdoor teaching and study spaces provided to enhance the teaching and learning environment.	One							
		· Recruit well qualified academic and non-academic members of staff; and	Percentage of recruited academic and non-academic staff	60%One p							
		· Maintain all the equipment and infrastructure to be used for the teaching and learning.	Percentage of equipment and infrastructure regularly maintained to ensure functionality for teaching and learning purposes, assessed through regular inspections and assessments.	100%							
7.1.4	Enhanced visual outlook of the University	· Consider having a green design with more landscape features -Develop a landscape and revegetation plan	The proportion of the total area dedicated to green spaces in the design. For every tree cut, 10 more should be replanted and taken care of	100%	Annual Progress report	Ongoing	University management	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university

		· The design should blend with the existing buildings for easy uniformity of the structures	Percentage of surveyed community members indicating that the new structure seamlessly integrates with existing buildings.	100%						
		· Provide good landscaping and spaces for students to relax outside the classroom and for group discussions within the landscape areas	Percentage of students reporting satisfaction with outdoor landscaping and relaxation spaces through surveys or feedback forms.	100%						
		· Construct a senior common room which can be used by postgraduates and lecturers.	Percentage of postgraduates and lecturers utilising the senior common room compared to the total number eligible for its use, as tracked through sign-in logs or access card data.	100%						
		· Provide good labelling of the facilities e.g. campus map, fire exit, emergency numbers etc	Percentage of respondents who express satisfaction with the clarity and visibility of facility labels, as indicated by survey responses or feedback forms specifically addressing this aspect.	100%						

		· The designs should have enhanced ventilation and use of natural lighting (consider eco-designs and big windows)	Percentage decrease in energy consumption attributed to lighting and HVAC systems compared to baseline data, as measured by energy usage meters or utility bills.	100%						
		· Ensure that the design of the buildings have security features e.g. alarm, fire escape system.	Percentage of occupants expressing confidence in building security features via regular surveys.	100%						
7.1.5	Enhanced safety of the students	· The building should have emergency fire exist provision apart from the elevators (as most for the is building within the campus do not have such facilities and in case of fire, these can lead to more casualties) Ensure the building includes emergency fire exit provisions, separate from the elevators, to mitigate potential casualties.	·	100%	Annual Progress report	Annually	University Management	KUHEeS		Cost part of operation cost of university
			Implementing a robust and regularly updated emergency mechanism							
		· The buildings should be disability friendly (provide ramps and elevators) fire. Ensure that the buildings are disability-friendly by providing ramps and elevators for	Percentage of occupants reporting awareness of and access to emergency fire exits, as assessed through periodic surveys or building inspections.	100%						

		Designs should have non-slippery floors (as observed in most buildings they put slippery porcelain tiles which are not good for the public places). Additionally, prioritise easy-to-clean and maintain flooring solutions.	Percentage of incidents related to slips and falls reported by building occupants, with a decrease indicating improved safety due to the implementation of non-slippery flooring materials.	100%						
		· Provide safe stairs and which can easily be used not posing safety risks.	Percentage of users satisfied with stairs safety and usability via surveys.	100%						
7.1.6	Enhanced management of student's properties	· Provide lockable facilities (lockers) for individual students to store their items (as the University have students which stay off campus and have challenges to keep their belongings during the day and examination times). Most of them tend to keep their bags in offices of the lecturers.	Percentage of students utilising the provided lockers for storing their belongings, measured through periodic checks or access logs of locker usage.	100%	Annual Progress report	Bi-annually	University management	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		· Provide big office facilities for lecturers and lockable cabinets	Percentage of lecturers reporting satisfaction with the spaciousness of their office facilities.	100%						
8	**Negative Impacts during operation phase**									
8.1	**Negative social impacts during operation phase**									

8.1.1	Increased demand for water and energy supply	· Install water-conserving automatic taps and toilets, as well as energy saving electrical sittings to optimise use of public resources. The designs have shades to improve the thermal comfort dramatically during the whole year. This also facilitates the use of passive and semi-active cooling strategies to minimise energy consumption. These transitional spaces allow people to thermally get adapted to different spaces with different thermal conditions while they are going in and out to avoid thermal shock.	Percentage decrease in water and energy consumption. Percentage of occupants reporting satisfaction with thermal comfort.	100%	Annual Progress report	Monthly	University management	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		· Fix any water leaks through damaged pipes and faulty taps promptly by a licensed plumber.	Percentage reduction in water wastage from leaks.	100%						
		· Use of flat roof where solar energy will be installed.	Percentage of buildings with flat roofs equipped with solar energy systems, tracked annually.	100%						
		Install a backup generator in case of any power failures e.g. in the morgue.	Number of energy back up system provided	One per facility						
		· Additionally, flat roof should make a provision for future expansion of additional floors on top.	Percentage of flat roofs planned for future additional floors.	100%						
		· Sensitise the occupants of the offices and teaching facilities and library to conserve energy and water.	Percentage of flat roofs with provisions for additional floors.	100%						

		· Monitor water and energy use to set targets for their efficient use	Achievement percentage compared to set targets.	100%						
8.1.2	Increased risk of road accidents	· Place at the vicinity of the entrance to the site appropriate traffic warning signs instructing occupants and visitors to reduce speed.	Number of incidents registered	Zero cases	Annual Progress report	Monthly	Department of Road Traffic	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		· The site has a challenging topography, hence the deigns need to have raised walkways connecting the buildings through stairs and ramps,	Completion percentage of raised walkways with stairs and ramps.	100%						
		· Instruct security guards to control traffic along the private road leading to the University and assist vehicles as they enter and exit the University.	Percentage of effective traffic control and vehicle assistance by security guards.	100%						
		· Maintain a record of incidents and accidents on the roads leading to the campus.	Percentage of effective traffic control and vehicle assistance by security guards.	100%						
		· Develop an emergency response procedure and develop and display at the entrance to the campus.	Percentage of incidents and accidents recorded and documented accurately.	100%						
		· Display contacts of emergency service providers including breakdown vehicle and traffic police at the main entrance to the University.	Number of emergency contact information displayed accurately and prominently at the main entrance.	100%						
9	**Negative environmental impacts during operation phase**									
9.1.1	Soil pollution due to generation of solid waste and	· Contract a private waste handler who is licensed by EAD for waste disposal.	· Presence of solid and hazardous waste	Zero cases of presence	Annual Progress report	Monthly	Environmental Office from City Council	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university

	hazardous substances e.g biomedical waste			of waste on site							
		Use the 3Rs (Reduce, Re-use and Recycle) principle for the different types of wastes.	Percentage of waste managed according to the 3Rs (Reduce, Reuse, Recycle) principle.	100%							
		· Project might consider constructing a temporary waste storage facility as the project will increase number of people on campus.	Percentage of waste reduced, reused, and recycled according to the 3Rs principle.	100%							
		· Increase number of toilets (connected to sewer system) to match the demand and projections for the students.	Number of toilets increased to meet student demand and projections.	100%							
		· Segregate wastes by providing different bins for each type of waste.	Number of waste bins provided for waste segregation.	100%							
		• Provide a separate system for management of health care waste separate from the general waste from the building i.e. including biomedical waste	Number of waste treatment systems provided	100%							
		• Provide a waste storage area within the facility for handling biomedical waste and at minimum should be provided with impervious surface, designed for cleaning, disinfection with available water supply, well secured, proper lighting and ventilation, segregated from food supply areas, and provision for protective equipment storage site.	Number of waste storage area for hazardous waste	One for the building							
		· Maintain dumping sites that will be identified during construction.	Number of designated dumping sites maintained.	100%							

		· KUHeS shall ensure that hazardous and biomedical waste are disposed of in accordance with local regulations and best practices such as through authorised waste management facilities or specialised treatment methods (e.g., autoclaving, chemical treatment).	Percentage compliance for hazardous and biomedical waste disposal.	100%						
		· Providing comprehensive training and education programs for laboratory staff and students on proper waste management practices, including waste segregation, labelling, and disposal procedures, to minimise the risk of environmental contamination and health hazards.	Percentage of trained individuals in waste management practices.	100%						
9.1.2	Water Pollution due to generation of liquid waste	· The University will dispose of effluent from the new infrastructure through the existing sewer line.	· Presence of liquid waste	0 % presence of liquid waste	Annual Progress report	Monthly	Environmental Office from City Council	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		• Provide a separate system for management of health care waste separate from the general waste from the building i.e. including biomedical waste	Number of waste treatment systems provided	100%	Annual Progress report	Monthly	Environmental Office from City Council	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
9.1.3	Injuries and loss live and properties due to fires	· The project shall need to be designed to have an emergency exist outside the building accessible by everyone.	Number of firefighting equipment per risky areas	100% present in all hot spots	Annual Progress report	Monthly	Department of Fire services – Lilongwe City Council	· KUHes	Cost part of operation costs of the University	Cost part of operation cost of university

		· Carry out firefighting trainings and have a contract to carry out routine fire drills;	Number of inspections carried out	Once per quarter						
		· Place fire control measures appropriately as per requirement of the Lilongwe City Assembly laws.	Number of fire assembly points onsite	One						
		Installation of smoke alarms and sprinkler systems	Percentage of rooms with smoke alarm systems	100%						
		• Training of staff for operation of fire extinguishers, carry out routine fire drills and evacuation procedures	Percentage of full time staff trained	100%						
		• Development of facility fire prevention or emergency response and evacuation plans with adequate guest information	One fire prevention plan developed and implemented	one						
		· Properly label the fire exit doors within the building.	Percentage of fire exit doors correctly labelled as per safety regulations, assessed through periodic inspections or audits.	100% present in all hot spots						
9.1.4	Increases cases of STIs including HIV and AIDS	· Develop and implement an HIV and AIDS policy and a prevention, treatment, care and support programme;	· Level of understating STIs including HIV and AIDS matters	Once per quarter	Annual Progress report	Bi-annually	KUHeS Medical Clinic	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		· Sensitise staff and learners on HIV and AIDS prevention;	Number of HIV and AIDS prevention sensitisation sessions conducted for staff and learners, tracked monthly or quarterly.	Once per quarter						
		· Free condoms to be made available to staff.	Number of free condoms distributed to staff members,	Once per quarter						

			tracked monthly or quarterly.							
		· Distribution of information, education and communication (IEC) materials on STIs including HIV and AIDS.	Number of IEC materials distributed to students and staff members, tracked monthly or quarterly.	Once per quarter						
9.1.5	Increased demand for water	· Install water-saving equipment, including ultra-low-flush toilets, spray nozzles, urinals, faucet aerators, and low-flow showerheads, and pressure-control valves.	· Number of water-saving equipment units installed across the campus.	In all water use points	Annual Progress report	Bi-annually	University Management	· KUHeS	Cost part of operation costs of the University	Cost part of operation cost of university
		Install water reserves within the building (as double storey experience water shortage within the university)	-Number of water reserved installed	One per facility						
		· Post notices to encourage the sparing use of water.	Number of water conservation notices posted throughout the campus per month.	one per each notice board						
	Total Budget for implementation of ESMP								**75,500,000**	**25,850,000**

6.4. Implementation of ESMP

This section explains the implementation and monitoring of the ESMP. It identifies the capacity of the involved institutions and their roles but also explains how their capacities can be enhanced and strengthened.

6.4.1 Project Implementation Unit

The Ministry of Education (Moe) has established a Project Implementation Unit to oversee the implementation of the project. Specifically, the project has environmental and social safeguard specialists. This will provide a technical backstop to ensure that the ESMP has been implemented in line with the requirements of the World Bank and the Government of Malawi. The team will work together with the World Bank's environmental and social team to provide support for the implementation of the safeguard's activities. The main activities of the safeguards team are:

i. Planning and implementation of the ESMP.
ii. Ensuring that social and environmental protection and mitigation measures in the ESMP are incorporated into site-specific Environmental and Social Action Plans.
iii. Ensuring that the District Environment Sub-Committee (DESC) guided by the Environmental District Office is provided with relevant resources to oversee the implementation of the ESMP.
iv. Supervision and monitoring of the progress of activities of contracted consulting engineers for the implementation of different components of the ESMP.
v. Responsible for modifications to the ESMP when unexpected changes are observed during implementation.
vi. Reporting of incidents (Authorities, world bank).
vii. Ensure submission of periodic environmental and social management and monitoring reports to the World Bank.
viii. Provision of permits related to site activities e.g working at height, confined space, incident Investigations,
ix. Promote improved social and environmental performance through the effective use of management systems; and
x. External communication with other implementing partners, government ministries and agencies, and non-government organisations on the matter of mutual interest related to environmental management under project development.

6.4.2 Construction Supervision Firm

The construction supervision firm will be engaged to ensure quality assurance in the construction works. The supervision firm will also be directly responsible for providing the necessary support to contracted artisans in the implementation of environmental and social management. The construction supervision firm is expected to have an Environmental and Social Expert within its team. The construction supervision firm advises contracted artisans on ESMP implementation and monitors their work. The contracted artisans will submit monthly progress reports to the PIU. The construction supervision firm, inter alia, is responsible for the following:

i. Regular monitoring of artisans' environmental performance, as scheduled in the ESMP.

ii. Supervise site environmental management systems for artisans and provide corrective instructions.
iii. Review and report on ESMP implementation.

6.4.3 KUHeS

KUHeS works on behalf of the Ministry of Education. The University will be responsible for hiring the consulting engineer and will also be responsible for contract management.

6.5 Capacity Assessment

The successful implementation of ESMP depends on the capacity of stakeholders. Capacity building includes equipping individuals with the understanding, skills, and access to information, knowledge, and training that enables them to perform effectively. However, as highlighted in the ESMF, there is inadequate capacity at all levels to implement despite various trainings conducted because of factors such as transfers and retirements, which have greatly affected the capacity levels among district and frontline staff. The ESCP requires that relevant training be conducted before the commencement of any construction work and that it be repeated as necessary throughout the project. In addition, there is training for contracted consulting engineers and Contractors.

There will be training for a Trainer of Trainers (ToT) program for the construction supervision firm which will be executed by the PIU. This ToT will provide the consultant and the Contractor with an understanding of this ESMP, the identified impacts, and suggested mitigation measures. In turn, the Contractor is going to train the contracted artisans before the commencement of construction works. Table 6-3 presents the training programs for different stakeholders.

Table 6- 2: Environmental and Social Training Plan of Stakeholders

Day	**Topic**
Day 1	Brief overview of the Environment Management Act (2017)
	Brief overview of the Environment and Social Framework (ESF)
	Presentation of the ESMP
	Description of the identified impacts and their mitigation measures
	Description of the implementation and monitoring roles of the DESC, SMC and artisans
Day 2	Explaining a guide for Contractor artisans to develop site specific Environmental and Social Action Plans based on the ESMP.
	Monitoring and reporting of the construction activities
	Incident reporting

6.6 Stakeholder Engagement Plan

ESS 10 recognises the importance of open and transparent engagement between the borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and significantly contribute to successful project design and implementation. SAVE project has been engaging with stakeholders and will continue to do so throughout the project's lifecycle. The University will play a major role in linking construction subprojects with the

community. This ESMP also has a Grievance Redress Mechanism that is to be used at each project site and is in line with the provisions of the Stakeholder Engagement Plan (SEP).

6.7 Grievance Redress Mechanism

Grievances and complaints about construction, expropriation, construction activities, social issues, and other subjects related to the project from the start to the end of the project will be redressed for effective project implementation. In this respect, all grievances and complaints will be recorded and processed at all stages of project implementation through a Grievance Redress Committee established at the University level. The principles of effective Grievance Redress Procedures (GRPs) include fairness, objectivity, independence, simplicity, and accessibility. Regarding fairness, grievances are treated confidentially, assessed impartially, and handled transparently. Regarding objectivity and independence, GRM is supposed to operate independently of all interested parties to guarantee fair, objective, and impartial treatment for each case. GRM officials have adequate means and powers to investigate grievances (e.g. interview witnesses and access records). For simplicity and accessibility, the procedures to file grievances and seek action should be simple enough that project beneficiaries can easily understand them. The GRM should be accessible to all stakeholders, irrespective of the remoteness of the area in which they live, the language they speak, and their level of education or income.

Several grievances may be registered during the project implementation. The most critical issues are related to resettlement and compensation. Other critical ones involve gender-based violence, sexual exploitation, labour-related grievances, and many others, considering that the work will be done within the University campus where there are students and workers interacting directly and indirectly.

Some project-specific grievances and disputes that may arise during ESMP implementation include the following:

a) Unfair award of contracts.
b) Delayed payments of Contractors.
c) Delayed disbursements of project funds.
d) Project impact on the rights or usage of resources.
e) Traffic problems related to project activities.
f) Construction site-related complaints, for example, noise, dust, etc.;
g) Gender-Based Violence.
h) Sexual Harassment; and
i) Sexual Exploitation.

Other critical grievances are related to gender-based violence, sexual harassment and exploitation, and other social issues. Gender-Based Violence is an umbrella term for any harmful act that is perpetrated against a person's will and is based on socially ascribed (i.e. gender) differences between males and females. It includes acts that inflict physical, sexual, or mental harm or suffering; threats of such acts; coercion; and other deprivations of liberty. Sexual Harassment (SH) refers to unwelcome sexual advances, requests for sexual favours, and other unwanted verbal or physical conduct of sexual nature. SH differs from SEA in that it occurs between personnel and staff working on the project and not between staff and project beneficiaries or communities. Sexual Exploitation and Abuse are any actual or attempted abuse of a position of vulnerability, differential power, or trust for sexual purposes, including, but not limited to, profiting monetarily, socially, or politically from the sexual exploitation of another.

6.7.1 The Aim of the Grievance Redress Procedure

The aim of the Grievance Redress Procedure is to settle or redress any individual grievance or complaint of PAPs promptly, fairly, objectively, and as much as possible, in a manner that is acceptable to all parties. The procedure for addressing grievances for this project will be through the Grievance Redress Mechanism (GRM) that has been established for the University. The general approach will be to seek a solution to the problem in the earliest stage of the project and avoid taking complaints to courts for redress, which requires long processes and sometimes may take a long time before the issue is resolved.

The following will be considered when applying this approach:

a) Provide straightforward and accessible ways to PAPs to make complaints or resolve any disputes that may arise due to project activities.
b) Identify and implement appropriate and mutually acceptable actions to address complaints.
c) Ensure that complainants are satisfied with the outcomes of the corrective actions.
d) Avoid the tendency to resort to judicial proceedings; and
e) Monitor compensation activities to ensure that compensation is met appropriately.

To address Gender Based Violence, the GRM Committee will be required to

a) Protect the confidentiality of survivors, recognise them as principal decision-makers in their own care, and treat them with agency, dignity, and respect for their needs and wishes.
b) Adopt risk-based approaches that aim to identify the key risks of GBV and undertake measures to prevent or minimise harm.
c) Engage community partners—local leaders, civil society organisations, gender, and child advocates— as resources for knowledge of local-level risks, effective protective factors, and mechanisms for support throughout the project cycle, particularly for workers in the vicinity of schools and other places where women and girls would gather (markets, rivers).
d) Adapt and adjust mitigation measures to respond to the unique drivers and context in any given setting; and
e) Ensure operations integrate mechanisms for regular monitoring and feedback to track effectiveness and build internal knowledge of what works to prevent, mitigate, and respond to grievances such as GBV.

6.7.2 Grievance redress mechanism for SAVE Project

To handle grievances related to environmental and social concerns, the University established a grievance redress mechanism which includes a GRM committee, dedicated email address, and phone number. The GRM need to be disclosed to the public through meetings and media to ensure that it is functional. Grievances will be recorded in grievance reporting forms and grievance-compliant forms, sorted, and assigned to an appropriate party for resolution (composition of the GRM committee).

6.7.3 Duties and Responsibilities of Grievance Redress Committee

The committee has already been trained to identify and manage different grievances, including GBV. However, since there will be new additional members (as students graduate and others are engaged), they need to be trained to identify and manage grievances. The committee meets once a month to propose corrective and precautionary actions.

If required, the committee may invite applicants, relevant governmental authorities, and/or third parties to these meetings. Specifically, the Committee will

a) Represent the interests of PAPs, stakeholders, and communities in the project zone of influence.
b) Act as an entry and exit point for all grievances.
c) Monitoring safety standards, labour requirements, and community health and social issues during construction work.
d) Monitor compensation activities; and
e) Through the community level GRC representative, it provides support in rolling out the GRM community sensitisation meetings, receiving and channelling grievances to the project, and feedback to the PAPs.

6.7.4 Grievance Reporting Procedure

Table 6-4 summarises the process followed in the redress of grievances. All types of grievances shall be received by the designated project official for sorting, processing, and providing feedback within the committee.

When receiving the grievances of the vulnerable PAPs, disabled and illiterate people, the committee will pay special attention and help them to receive their grievances properly. The grievances, depending on the matter and gravity, can be resolved via committee representatives. When required, site investigations will be undertaken involving technical staff from relevant organisations, such as developers and relevant government offices. Technical reports that serve as a basis for the discussions will be prepared and tabled before the Grievance Redress Committee. During this site observation, the complainant or his/her representative shall also be present.

The committee will inform the complainant about the status of their grievances within 10 working days of receiving the complaint and carrying out the investigations. If the applicant is not satisfied with the outcome, the GRM committee representative forwards the case to the Grievance Redress Committee and notifies the applicant (Table 6.4). If the committee fails to resolve the case, the case can be referred to an arbitrator or court.

Table 6- 3: Grievance Redress Process for the SAVE project

Process	**Description**	**Time Frame**	**Other information**
Identification of grievance	Face to face; phone; letter, e-mail; recorded during public/community interaction; others	1 Day	Email address; hotline number
Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e. in a reporting book)	4-7 Days	Significance criteria: Level 1 –one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMP provisions
Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	7-14 Days	NA

Process	Description	Time Frame	Other information
Development of response	Grievance assigned to appropriate party for resolution Response development with input from management/ relevant stakeholders	4-7 Days 7-14 Days	NA
Response signed off	Redress action approved at appropriate levels	4-7 Days	Project staff to sign off
Implementation and communication of response	Redress action implemented and update of progress on resolution communicated to complainant	10-14 Days	NA
Complaints Response	Redress action recorded in grievance resolution book Confirm with complainant that grievance can be closed or determine what follow up is necessary	4-7 Days	NA
Close grievance	Record final sign off of grievance If grievance cannot be closed, return to step 2 or refer to recommend third-party for arbitration or resort to court of law.	4-7 Days	Final sign off on by University GRM committee in liaison with the relevant government representative

The committee will inform the complainant about the status of their grievances within 10 working days after receiving the complaint and carrying out the investigations. If the applicant is not satisfied with the outcome, the case can be referred to an arbitrator or a court.

However, if the grievance is criminal in nature, the GRC shall recommend further action to be taken by the authorities so that the victims or offenders can be handled according to the laws of the country.

6.8 Project Reporting Commitments

The Contractor is required to prepare regular monthly reports on environmental, social, health, and safety performance. On an annual basis, the services of an independent environmental and social compliance auditor determine the level of the project's environmental and social performance. The report will provide the information and data required to determine compliance with national legal requirements. Periodic reports on environmental and social sustainability will be submitted to the MEPA, World Bank, and other regulatory authorities.

6.8.1 External Monitoring

Stakeholders and environmental authorities play a significant role in monitoring and ensuring compliance. Among external monitoring parties, will include.

6.8.1.1 Regulatory

- MEPA for surveillance of impact management and compliance of projects.
- Ministry of Labour will be involved in the surveillance of public and occupational health aspects of the project, such as the transportation of construction workers and road safety for the public. Labour authorities to keep watch on the compliance of labour laws for the construction works, especially regarding child labour and gender equity,
- Lilongwe City Council is involved in handling public concern, especially when there are social conflicts.
- National Construction Industry Council for monitoring construction standards.

6.8.1.2 Independent Audits

External experts may be called upon to undertake limited monitoring activities for the Contractor and/or consultant on pre-agreed terms. The areas requiring this initiative include environmental quality sampling and measurements (water, air, soil, and noise). External experts will be engaged on a need-based basis, but within project implementation structures.

6.8.1.3 Design considerations

Through a thorough analysis, the study has come up with the following design consideration of which mostly were sourced through the stakeholder consultations;

Design considerations.

- Water storage facility mainly for the buildings as the double storey structures experience water shortages, hence a need to have water storage tanks.
- Energy back up system mainly for a morgue to be provided.
- Provision of non-slippery surfaces to avoid safety hazards during operation phase.
- Provision of Fire alarm systems, firefighting system (Fire reel horse), Fire hydrants systems. fire exit, emergency numbers, water hydrants and these will need to be tested before being handed over.
- Waste storage systems for temporary waste storage during operation phase.
- Heva a separate system for general waste and biomedical hazardous waste and provision of security measures to prevent unauthorised access.
- More natural lighting to the building to allow natural light.
- Traffic management during construction and operations.
- Separate facilities and separate mortuary/morgue to the main building and relocate the entrance to the mortuary by not disturbing students during learning .
- Consider having a green design with more landscape features.
- The design should blend with the existing buildings for easy uniformity of the structures.
- Provide good landscaping and spaces for students to relax outside the classroom and for group discussions within the landscape areas.
- Construct a senior common room which can be used by postgraduates and lecturers.
- Provide good labeling of the facilities e.g. Campus map.

- Construct big lecturer theatres rather than many small ones (big once can be demarcated using temporary demarcations) as the intake has increased and there are currently many students.
- Include more technology and facilities for learning e.g., more sockets, built-in projectors, high level ICT facilities, audio visual facilities.
- Classrooms and lecturer theatres to have sound proofing facilities.
- Consider having durable furniture for the lecturer theatres (most modern furniture is not durable as experienced from other newly constructed existing buildings)
- Design of the computer laboratory should be big to accommodate more students as currently, most of them do not have access to computers.
- Increase number of toilets to match the demand and projections for the students.
- The designs should have enhanced ventilation and use of natural lighting (consider eco-designs and big windows)
- Provide lockable facilities (lockers) for individual students to store their items (as not the University have students which stay off campus and have challenges to keep their belongings during the day and examination times) and most of the students keep their bags in the offices of the lecturers).
- Provide big office facilities for lecturers and lockable cabinets.
- The building should have emergency fire exist provision apart from the elevators (as most for the is building within the campus do not have such facilities and in case of fire, these can lead to more casualties).
- The buildings should be disability friendly (provide ramps and elevators).
- Designs should have non-slippery floors (as observed in most buildings they put slippery porcelain tiles which are not good for the public places) and easy to clean and maintain.
- Provide safe stairs and which can easily be used not posing safety risks.

Chapter Seven: Conclusion and Recommendations

7.1 Conclusions

The Environmental and social assessments conducted for the construction of the proposed teaching complex and the OdeL Hub at KUHeS found that the project may have both positive and negative impacts on the environment and local communities. Positive impacts include increased student enrolment at the University, improved teaching and learning facilities, reduced pressure on classrooms, enhanced campus aesthetics, and the potential for more professionals to address healthcare sector gaps, leading to increased employment opportunities. Despite these positive impacts, the proposed development also has various negative consequences. These include increases in noise and smoke pollution, influx of students which might affect sanitary facilities, increase in cases of sexual exploitation and abuse, loss of trees during the construction phase, increased number of accidents, higher risks of gender-based violence, child and forced labour, and interference with marriages, among other issues, increases in illicit behaviour and crime, heavy traffic in and outside the campus, increased water and energy consumption and interruption, and increased waste generation.

The current project design considers several alternatives and environmentally friendly designs. It is strongly advised that rigorous monitoring measures be put in place, considering both engineering and environmental aspects. This is crucial for safeguarding the environment while simultaneously achieving economic development. By doing so, the project can align with the established practices and standards. The project promises substantial economic benefit. Considering this, this report recommends that the project proceed, provided that the measures outlined herein are diligently and comprehensively implemented.

7.2 Recommendations

i. All major stakeholders in the project should be actively engaged and granted full access to the premises for monitoring purposes.
ii. Given the nature of the project, the contract safeguard team should consist of an environmental safeguard officer, social safeguard officer, and occupational health and safety officer.
iii. The project should include the cost of constructing a new incinerator, which will be demolished later, to serve female students on campus.
iv. The revised project designs should maintain the initial environmental and social safeguards integrated into the design.
v. The SAVE project should collaborate with an independent Gender-Based Violence service provider for the entire duration of construction work.
vi. Implement strict measures for managing occupational health and safety issues, particularly because construction works will take place within a brownfield area.

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Annex 1: Terms of Reference for preparation of ESMP

Skills for A Vibrant Economy -SAVE

Ministry of Education

TERMS OF REFERENCE FOR DEVELOPMENT OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

COUNTRY-Malawi

NAME OF PROJECT-Skills for A Vibrant Economy (SAVE)

Assignment Title: Preparation of Environmental and Social Management Plan (ESMP) for the construction of **a teaching complex and ODeL Hub** through the Skills for A Vibrant Economy (SAVE) project in the Ministry of Education.

1.0 INTRODUCTION

The Government of Malawi through Ministry of Education and Ministry of Labour and Vocational Training, with funding from World Bank is implementing the Skills for a Vibrant Economy Project (SAVE). The project aims to improve access to market-relevant skills programs in priority areas of the economy, ensuring equity in skills training with empowerment of women and girls and vulnerable youth through targeted skills in priority areas of the economy and creating a conducive policy environment & strengthening systems and institutional capacity for skills development, which will centre on: Technical, Entrepreneurial, and Vocational Education and Training (TEVET) and Higher Education Reforms, Student loans, Industrial links, Digital technology and Safeguards, Capacity Building, and Technical Assistance among other systemic issues.

2.0 CONTEXT AND BACKGROUND

The expected duration for implementation of the Skills for A Vibrant Economy (SAVE) project is 5 years (from 2021 to 2026). The Project Development Objective (PDO) is to increase access, particularly for females, to labour market-relevant skills development programs in participating institutions, targeting priority areas of the economy.

The program scope consists of four components which contribute to the PDO: Component 1: Supporting Increased Access to Skills Development Programs in Higher Education. Component 2: Supporting Increase in Access to TEVET Skills Development. Component 3: Tertiary Education System Strengthening, Project Management, M&E and Communications. 4: Contingent Emergency Response.

SAVE project will finance 9 public universities, 7 nationals technical University's and up to a maximum of 30 other TEVET institutions competitively selected from Community Technical University's (CTUs), Private Technical University's (PTUs), and Community Skills Development Centers (CSDCs). The project will specifically support and finance the **Construction of and ODeL Hub at Kamuzu University of Health Sciences, Lilongwe Campus.**

The Environmental and Social Management Framework (ESMF) for SAVE project was prepared and requires that after subprojects have been identified, environmental and social due diligence should be conducted to eliminate or reduce both environmental and social negative impacts. This is in line with the Environmental Management Act (EMA) 1996 which stipulates that an environmental assessment is required for certain types of activities before their implementation depending on the size and location of the project and the activities to be undertaken.

Against this background, the SAVE Project has conducted Environmental and Social Screening. The outcomes of the screening require the development of Environmental and Social Management Plans (ESMP) and Monitoring Plans before the commencement of civil works at Kamuzu University of Health Sciences, Lilongwe Campus. In the above context, Kamuzu University of Health Sciences is looking for a consultant to develop an ESMP plan for the proposed subproject. The individual beneficiary technical University's and universities shall be the client for the consultancy that will recruit their respective consultants and manage the execution of the assignment under the general guidance of the SAVE Project PIU. Kamuzu University of Health Sciences intends to procure the services of a consultant for the development of (ESMP).

3.0 OBJECTIVE OF THE ASSIGNMENT

The primary objective of the consultancy is to develop Environmental and Social Management Plans (ESMP) for the construction of a teaching complex and ODeL Hub at KUHES, Lilongwe Campus, commensurate with national and international standards before the commencement of civil works under the SAVE project. The consultant shall appraise and familiarise themselves with the requirements of the SAVE project, the Government of Malawi, the World Bank, and the various relevant legislation and policies that will be associated with the implementation of infrastructure construction activities under the project. These shall form the backbone of the requirements for the ESMP to be developed under this assignment.

The detailed objectives of the assignment are to:

- Identify and assess key potential environmental and social impacts including those on gender, which may be caused by the proposed construction works.
- Propose measures that would enhance the positive effects of the proposed constructions and operation activities on both the environment and social components including gender issues in specific sites;
- Propose measures that will mitigate the anticipated negative impacts of the proposed constructions and operation activities on both the environment and social components, including gender concerns in specific sites;
- Conduct stakeholder consultative meetings which inform project key environment, social risks, and mitigation measures;
- Develop a costed ESMP monitoring plan with clear lines of responsibilities for key stakeholders.

4.0 SPECIFIC SCOPE OF SERVICES AND TASKS

The broad scope of this work is to conduct an Environmental and Social Assessment (ESA) of the proposed subproject based on the Government of Malawi regulations and the World Bank Environmental and Social Framework. ***The consultant will perform the scope of work while collaborating with Environmental District Officers from the Malawi Environmental Protection Authority (MEPA)*** and other relevant key stakeholders.

The tasks to be undertaken by the Consultant under this assignment shall include the following:

Task 1. Scoping of Environmental and Social Issues
The scoping study will determine and deliver the proposed physical limits for the study area, appropriate to the issues; proposed time frame for the ESA study; list of key stakeholders, initial consultation and analysis of findings; key potential impacts and the types and levels of impacts to be assessed in the ESA; review of works' designs and its interaction with environment, social and cultural aspects, potential alternatives for consideration in the ESA; review of information on the existing environment, recommendations for appropriate methods of survey/data collection to establish environmental and social conditions; recommendations for appropriate methods for the prediction and assessment of impacts.

Task 2: Description of the Proposed Sub-projects
The consultant will concisely highlight the proposed subprojects' name, postal address, aims and objectives. The consultant shall also describe the geographical, ecological, and general layout maps including map sketches and annotated photographs at appropriate scale as necessary based on project information acquired from the client. The description shall also include activities to be undertaken in and around the proposed subprojects site including input materials, final products, by-products, sources of raw materials, land acquisition and ownership, waste generation where applicable shall be detailed and cost of the proposed subprojects shall also be provided. The consultant will be required to suggest the costs for implementing the environmental and social management measures.

Task 3: Description and Establishment of Environmental and Socioeconomic Baseline Conditions of the Subprojects
The consultant shall carry out a survey to collect, collate and present baseline information of the existing environmental and socioeconomic characteristics of, within and around the proposed subproject sites.

Task 4: Public Participation and Consultations
The consultant will carry out a stakeholder analysis and prepare a stakeholder consultation plan for the inclusion and consultation of all the stakeholders throughout the assessment process. This entails consulting project-affected groups, public agencies/institutions and civil society organisations about the subproject's environmental and social aspects and demonstrating how views were considered within the report. The consultations should commence shortly after the screening and continue throughout the process. Disclosure of the report shall be done in a manner, form and language that are understandable and accessible, which enable the public full participation.
Task 5. Site specific map Provide a site-specific visible map of the area (scale 1:50,000) showing the proposed site and (1: 10,000) showing existing establishments in the area and surrounding areas

including natural endowments like rivers and streams. A site plan for the project should be provided. All maps should be in colour to portray the themes clearly and must be printed on A3 paper.

Task 6: Analysis and Determination of Potential Environmental and Social Impacts of the Subprojects

The consultant shall identify, analyse, and describe significant/core community, environment, occupational, health impacts that may be brought about by the proposed civil works. Such are the impacts of the proposed subprojects on the baseline of both environmental and socio-economic conditions as described in Task 3 (above) or impacts of the surrounding environment on the subprojects (externalities). The consultant will make a prioritisation of all immediate and future concerns and differentiate between short, medium, and long-term impacts paying special attention to the significant impacts (both positive and negative).

Task 7: Measures to Mitigate Adverse Environmental and Social Impacts of the Subprojects

The objective of this task is to identify, propose and describe pragmatic, community, occupational, health and safety mitigation measures to enhance the benefits of environmental and social protection. The cost effectiveness of such mitigation and enhancement measures shall be analysed against viable alternatives. Where no such suitable mitigation measures can be identified this will be clearly explained. Based on environmental and social assessment, mitigation / enhancement measures will be specified in the form of an environmental and social management plan.

Task 8 -Review of the legal framework pertaining to the project

Briefly review the legal framework pertaining to the proposed project and indicate their impacts on the project. Reference should at least be made to Environment Management Act, Education policy, Water Resources Act, National Water Policy, Public Health Act, Occupational Safety, Health and Welfare Act, Employment Act, New Land Act, Malawi National Land Policy, NCIC Act and other policies and pieces of legislations.

Task 9: Development of an Environmental and Social Management Plan

Based on the outcome of tasks above, the consultant shall prepare an environmental and social management plan comprising of a programme of assessing and managing the impacts during implementation, operation and post operation phase including decommissioning. This will provide time frames and implementation mechanisms, reporting responsibilities, description and technical details of monitoring measures, assessment of the institutional needs, staffing requirements and cost outlay for implementation. The plan should show how management and mitigation methods are phased with project implementation. The plan shall also include measures to prevent health hazards and to ensure safety in the working environment for the employees and the communities adjacent to the project site and project affected people.

Task 10: Preparation of an Environmental and Social Management Monitoring Plan (ESMMP)

The consultant shall prepare an environmental and social management monitoring plan for performance monitoring of how well project construction, operation and implementation of auxiliary and learner mentor interventions including the implementation of key mitigation measures are carried

out (including Environmental, Social, Gender, Health and Safety). He shall also propose outcome monitoring of key selected environmental and social indicators, such as gender-based violence (GBV), workers' safety and camping sites. The Environmental and Social Management Monitoring Plan (ESMMP) will focus on key impacts, specify the planned monitoring activities, key indicators, monitoring frequency and duration, budget and skilled personnel needs, institutional responsibility for each monitoring activity, and means of verification.

Task 11: ESMP Implementation Budget

Provide a clear statement of financial responsibilities, identify estimated summary of costs for the implementation of the proposed mitigation measures; provide detailed estimated budgets for all phases of the project including planning, implementation, monitoring and evaluation, with contingencies.

5.0 DELIVERABLES AND OUTPUTS OF THE ASSIGNMENT

By the end of the assignment, the consultant shall achieve the following deliverables and outputs:

Table 2: Deliverables and Outputs

S/N	Deliverable	Outputs	Timeline (days)
1	**Deliverable 1: Inception Report,** acceptable to the Client; that clearly illustrates how the assignment shall be executed by detailing the methodology for undertaking the assignment and a work plan, and proposals for presenting the assessment results in a concise manner. The inception report will be presented to the Ministry of Education before being signed off	• 2 printed copies of the Inception Report • 1 Flash Disk with soft copy of the Inception Report	10 days from date of contract commencement
2	**Deliverable 2: (a) Draft ESMP Reports**, acceptable to the Client	• 5 printed copies of Draft Final Report • 1 Flash Disk with soft copy of Draft Final Report for each site	30 days after date of Client's acceptance of Inception Report
3	**Deliverable 3: Final ESMP Report**s comprised of two versions of each report; Fuller report with all World Bank Requirements and shorter version as required by MEPA. The reports must be acceptable to the Client, covering Final ESMPs and Monitoring Plans that incorporate comments and feedback from the Client. Each construction site shall have its own Final ESMP Report.	• 10 printed copies of each site's Final Report • 1 Flash Disk with soft copy of each site's Final Report	20 Days after Client's acceptance of Draft ESMP Reports

Assessment of consultant's achievement of the deliverables shall include the Client's determination of extent to which performance parameters of completeness, accuracy, effectiveness, timeliness and communication have been satisfied as specified in the table below.

Table 3 below shows the performance objectives:

Performance Indicators	Quality Assurance Criteria
a) Completeness	Deliverables will be 100% complete
b) Accuracy	Deliverables will be 100% accurate.
c) Effectiveness	All deliverables must contribute to the overall success of the assignment
d) Timeliness	All deliverables will be on time and within schedule
e) Communication	Communication is professional, courteous, and accurate

6.0 QUALIFICATIONS AND EXPERINCE OF THE CONSULTANT

The Consultant should have the following educational qualifications, experience, and expertise:

- A minimum of a Master's Degree in Environmental Sciences, Environmental Management, Natural Resources Management or any related field;
- A minimum of five (5) years of relevant working experience in conducting Environmental and Social Assessments and development of ESMPs in Malawi;
- Practical knowledge, understanding and experience in World Bank Safeguards Operational Policies/Environmental and Social Framework (ESF);
- Practical knowledge, understanding and experience of national environmental laws and policies of Malawi;
- Excellent oral and written communication skills with ability to dialogue and interface with grass roots, district and other sector players.

7.0 REPORTING REQUIREMENTS

The overall assignment shall be overseen by the Ministry of Education (MoE) through the SAVE Project PIU. For day-to-day execution of the assignment, the Consultant shall report to the beneficiary institution's environmental and social safeguards focal person(s) who work closely with the PIU's Environmental Safeguards Specialist and the Gender and Social Safeguards Specialists. The consultant shall submit all requests for information, assignment reports (stipulated deliverables) to the client institution. The client shall submit copies of the reports to the SAVE PIU.

8.0 CLIENT INPUT AND COUNTERPART PERSONNEL

The Client, through the PIU shall provide the following inputs and counterpart personnel to the consultant:

a. Documents to be shared with the Consultants include: - Project Appraisal Document (PAD), Project Implementation Manual (PIM), World Banks Environmental and Social Framework (ESF), SAVE Project Environmental and Social Management Framework (ESMF), Labour Management Plan (LMP), the Stakeholder Engagement Plan (SEP), ESS checklist and the screening reports.
b. List of stakeholders and institutions to be visited and consulted for the development of the ESMPs.

9.0. ASSIGNMENT TIME FRAME

The consultancy will be delivered within a period of **60 work days**. This includes preparation time, field work, report writing, presentation/validation and submission of final documents.

Annex 2: Stakeholder Consultations

Stakeholder consultations involve engaging institutions within the project impact area and selected public institutions who expressed their views about the proposed projects. The stakeholder participation process tried to ensure that due consideration will be given to stakeholder values, concerns, and preferences when decisions regarding the project are made. The purpose of stakeholder involvement was to:

- Inform the stakeholders about the proposal and its likely effects.

- Canvass their inputs, views, and concerns; and
- Take account of the information and views of the public in the EIA and decision-making.

The key objectives of stakeholder involvement were to:

- Facilitate consideration of alternatives, mitigation measures and trade-offs (if any);
- Ensure that important impacts are not overlooked, and benefits are maximised.
- Reduce the chances of conflict by early identification of contentious issues.
- Provide an opportunity for stakeholders to influence project design positively (thereby creating a sense of ownership of the proposal.;
- Improve transparency and accountability of decision-making; and
- Increase public confidence in the Environmental and Social Impact Assessment processes

Stakeholder consultations in this project were facilitated through interviews and guided by a checklist of questions that are presented in the following sections.

5.1 Stakeholder Consultation Checklist for the ESMP

1. What type of environmental and social positive impacts will result from this proposed project, and how will these impacts be enhanced (state positive impacts for each phase of construction and operation)?
2. What types of negative environmental and social impacts should be expected during the construction of the proposed project and what are the proposed mitigation measures?
3. What type of environmental and social negative impacts should be expected during the operation and maintenance phase of the proposed project and what are the proposed mitigation measures

5.2 Stakeholders Comments

The comments raised by stakeholders were collated and analysed to see which issues are of concern and should be addressed through the ESMP; these issues are presented in Annex 2 of this report. However, the main key stakeholders consulted include KUHeS staff, KUHeS Head of Departments, Students Union, Students, Lilongwe City Council, Department of Energy, and many others.

A2:1 Evidence of Consultation

Stakeholder consultation with KUHeS Management

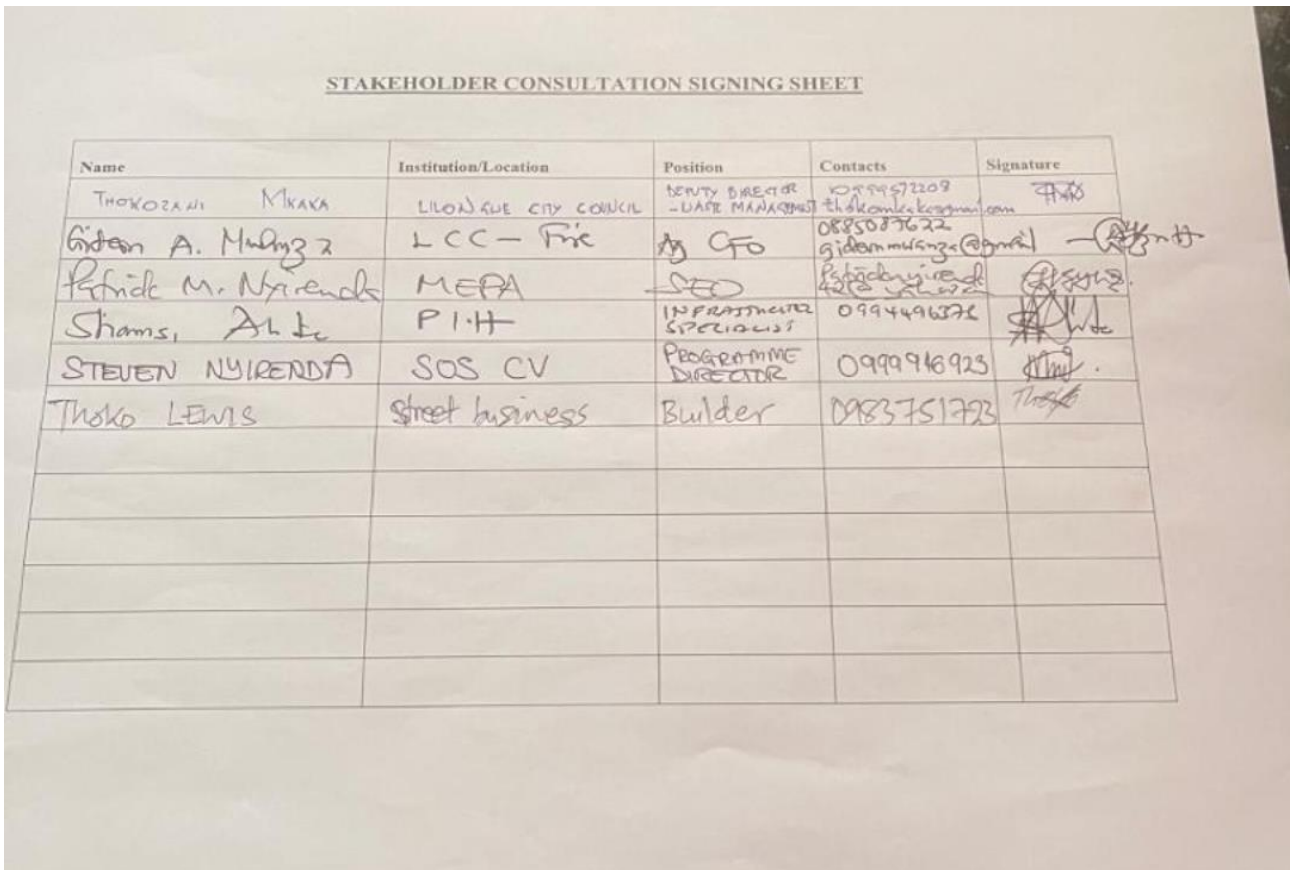
Consultation meeting with KUHES-KCN Staff Members

STAKEHOLDER CONSULTATION SIGNING SHEET

SN	NAME	INSTITUTION	DESIGNATION	CONTACT
	Pempho C Katanga	KUHeS	Lecturer	pkatanga@kuhes.ac.mw 0888504244
	Chisomo Mulenga	KUHES	Lecturer	cmulenga@kuhes.ac.mw 0994 40 3502
	Felistas Chiundira	KuHeS	Lecturer	fchiundira@kuhes.ac.mw 0999817298
	Fulile Singano	KUHeS	Lecturer	fsingano@kuhes.ac.mw 0996242949

STAKEHOLDER CONSULTATION SIGNING SHEET

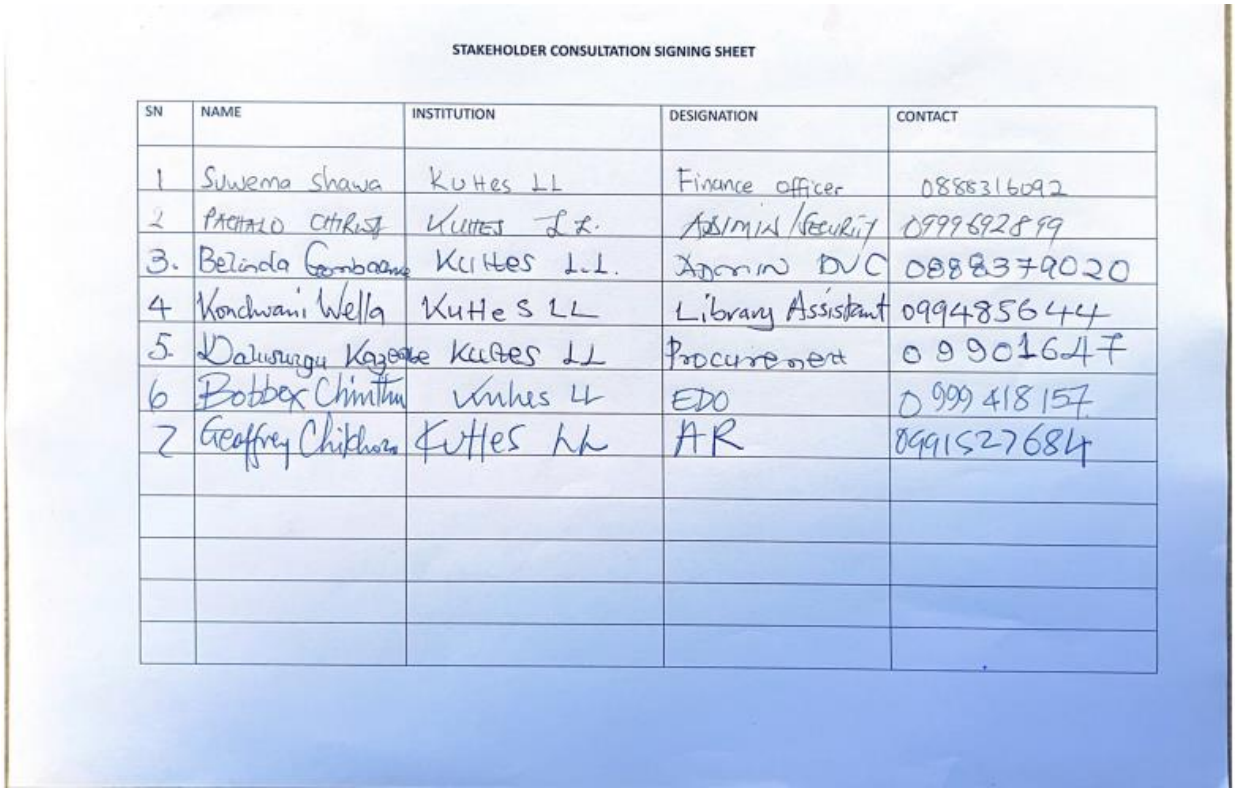
SN	NAME	INSTITUTION	DESIGNATION	CONTACT
	T. MKAKA	LILONGWE CITY COUNCIL	DD - CLEANSING	0999572208
	Santi W. Laston	Fire - Lilongwe CC	Fire	0997355380
	M. KAMANGA	LCC - FIRE	FIREOFFICER	0884020974
	Obvious Nyirenda	LCC - PLANNING	Development Control Manager	0999362442
	Julian K. Chipeta	LCC - Health	Principal, Nutrition HIV & Aids Officer	0993768078



STAKEHOLDER CONSULTATION SIGNING SHEET

Name	Institution/Location	Position	Contacts	Signature
THOKOZANI MKAKA	LILONGWE CITY COUNCIL	DEPUTY DIRECTOR - DATA MANAGEMENT	0999572209 thokomlekaogmail.com	
Gideon A. Mwanza	LCC – Fin	Ag CFO	0885087622 gideonmwanza@gmail	
Patrick M. Nyirenda	MEPA	SEO		
Shams, Ali	P.I.H	INFRASTRUCTURE SPECIALIST	0994496371	
STEVEN NYIRENDA	SOS CV	PROGRAMME DIRECTOR	0999946923	
Thoko LEWIS	Street business	Builder	0983751723	

A2:3 Implementation Committee Consultation



STAKEHOLDER CONSULTATION SIGNING SHEET

SN	NAME	INSTITUTION	DESIGNATION	CONTACT
1	Suwema Shawa	KUHES LL	Finance officer	0885316092
2	PACHALO CHRIST	KUHES LL	ADMIN/SECURITY	0999628599
3.	Belinda Gombama	KUHES LL.	Admin DVC	0883790020
4	Konchwani Wella	KUHES LL	Library Assistant	0994856444
5.	Dalitsunga Kazembe	KUHES LL	Procurement	0990164 7
6	Bobbex Chimthu	KUHES LL	EDO	0999418157
7	Geoffrey Chikhwa	KUHES LL	AR	0991527684

A2:4 Student Representative Committee Consultation

STAKEHOLDER CONSULTATION SIGNING SHEET

SN	NAME	INSTITUTION	DESIGNATION	CONTACT
	Patrick Simanje	Kuhes – KCN	SRC-vice President	0884054524/0991136332
	Siller Mpasa	Kuhes – KCN	SRC – Member	0992974277
	James Evance	KUHES – KCN	SRC – Member	0980413623
	Tinson Moyo	KUHES – KCN	Class representative	0991661372
	BERTHA MBOLIE	KUHES – KCN	Class representative	0994220074
	Triza Nyaganzi	KUHES – KCN	class representative	0888428760
	Gift Mkawera	Kuhes – KCN	SRC – Member	0993629764
	Tionge Kanyondo	Kuhes – KCN	SRC – member	0992370378
	Chifundo Charles	Kuhes – KCN	SRC – member	0994778096
	Shakira Kadango	KUHES – KCN	SRC – member	0995492206
	Pempho Mtanjah...	Kuhes – KCN	SRC – transport director	0888670868
	[illegible]	Kuhes – KCN	class representative	0994746571

A2.5: Anticipated Issues for KUHeS LILONGWE CAMPUS

SN	Name	Institution/Designation	Issues Raised	Recommendations
1	Students Council KUHES- FGD	Kamuzu University of Health Science.	***Positive Impacts***	
			Good and spacious learning environment.	
			Increased enrolment at the University because of the new structure	
			Students will not be learning in the cafeteria anymore.	
			The new structure will change the University's outlook	The students should take up ownership of the new structure when it comes to taking care of the property.
			The new structure will bring in new toilets and clean surroundings	The capacity of the sewer system should not be affected by the construction of the new structure.
			Negative Impacts	
			Trees will be lost during the construction stage.	More trees should be planted after the construction is finished for conservation of the environment.
			Classes will be disrupted because of the noise or the use of heavy machinery on the site.	The construction site should be closed off to avoid disruptions of classes.
			Sexual relationships among workers and students can also spread STIs on the campus.	Sensitisation should be done by the committee about the coming in of the workers on the campus and the negatives that can come with especially diseases like STIs and HIV and AIDS.
			Noise pollution and smoke pollution can be another challenge during the construction phase.	The developer should use machinery that undergoes servicing to avoid bad fumes.

			The workers should not be using facilities used by student like toilets.	The Contractor should have their own toilets for the workers.
			More classrooms will affect accommodation since the enrolment number will increase and the hostels will remain the same.	The University should consider building more hostels as well.
			Dust pollution because they don't sprinkle water regularly.	They should sprinkle water to suppress the dust at the campus.
			Heavy traffic and regular vehicles going to the construction site will be disturbing classes at the University.	The Contractor should consider opening another road near the Mzimba road for easy access of construction workers and transferring of materials to the site.
			Increased cases of theft on the campus.	Migrant workers should not be allowed access to the hostels and classes to avoid theft cases.
			Double store building usually bring in water problems.	The Contractor should find ways of making sure the building will have enough water and less blockages since it is a school and these facilities are usually used by many people.
	Fire Officer	Fire department-City Council Lilongwe.		Stairs should be contracted for fire emergencies
				Alarms should be incorporated, and they should be connected to the smoke detectors.
				Stairs should have sign arrows directing people during an emergency to assemble at the assembly point.

				Carpark should have reverse parking signs for easy exit of cars.
				Risk assessments should be done after completion.
				Water sprinkler system should be put in place.
3	Implementation committee- KUHES FGD.	KUHES	*Positive Impacts*	
			Development at the University because of the new structure.	
			Learners will have enough learning space.	
			The University will increase its enrolment because of the new classrooms.	
			Negative Impacts	
			Noise pollution during the construction phase	
			The influx of people in search for jobs or selling products on the construction site, this can cause disturbances and other issues on the campus. Locate the camp site outside the campus	Theft cases can increase on the campus because guards are usually limited on the parameters.
			Theft cases can increase on the campus because guards are usually limited on the parameters.	The Contractor should have their own guards on the premises, and Identity cards should also be introduced for their workers.

			Sexual relationships between workers and the student, committee members felt some could be coerced and this could be considered as exploitation, especially for the female students.	The workers and students should be sensitised regarding the cases of exploitation before the project commences.
			Loss of trees during construction phase.	The Contractors' designs should work around to conserve the trees on the campus or plant more after cutting them down.
			Dust pollution on the campus especially classrooms because of the proximity of the construction site.	The Contractor should use water to suppress the dust.

Table 2.6 Anticipated Issues at KUHeS Lilongwe Campus

Questions	**Response/mitigation measures**
Who will be monitoring the risks	
Noise pollution during construction works and disturbing classes	Site Hoarding Use of less noisy machine Schedule noisy work during daytime, or times students are at clinical or practical lessons. Reduce the idling of machinery when it is not in use.
Labour influx (within the campus which might also lead to high cases of theft) and this will add as site number three apart from other existing projects	The workers have unique uniforms for easy identification. There should be an organised way of employing people by the Contractor to avoid an influx of people. Workers to have identification cards for easy identification Locate the camp outside the campus.
Heavy traffic in and outside the campus (e.g., construction vehicles)	Use gate 3 for entry and exit. However, the preferred option is to use entry from main road which the concent will be sourced from the city council (Mzimba Street) Restrict and isolate construction site from the access area by students and the University staff

Dust generation on site and campus	Routine dust suppression whenever applicable
Removal of natural trees on site	Identify the species and replant and manage the species
Sexual exploitation and abuse	Develop and implement sexual harassment management plan. Work with GRM and train them on prevention of SEA
Increased water and energy consumption and interruption	Contractor to apply to ESCOM and Water board for temporary connection. Design should have a power and water back up system
There is a sewer line close to project site	Plan to divert the sewer line in collaboration with the city council . The Sewer line was redirected by the existing projects which are being implemented within the campus, hence no any impact.
Increased waste generation	Project might consider constructing a temporary waste storage facility as the project will increase number of people on campus
Enhanced beauty of the University	Consider having a green design with more landscape features. The design should blend with the existing buildings for easy uniformity of the structures. Provide good landscaping and spaces for students to relax outside the classroom and for group discussions within the landscape areas. Construct a senior common room which can be used by postgraduates and lecturers. Provide good labeling of the facilities e.g., campus map, fire exit, emergency numbers etc.
Meeting with the Deans and Head of Departments	
The project will ease the pressure on classrooms as now classrooms are small	Ensure that the project construct big lecturer theatres rather than many small ones (big once can be demarcated using temporary demarcations) as the intake has increased and there are currently many students. Include more technology and facilities for learning e.g., more sockets, built-in projectors, high level ICT facilities, audio visual facilities. Classrooms and lecturer theatres to have sound proofing facilities. Consider having durable furniture for the lecturer theatres (most modern furniture is not durable as experienced from other newly constructed existing buildings)

	Design of the computer laboratory should be big to accommodate more students as currently, most of them do not have access to computers
Influx of students which might affect the sanitary facilities	Increase number of toilets to match the demand and projections for the students
Disturbances of the classes due to noise from Mortuary (mortuary included in the design)	Isolate the mortuary and locate it away from the building (learning center). (check if it is for learning purposes or for income generating activity) Relocate the entrance to the mortuary by not disturbing students during learning
Possible increased congestion of classes	The designs should have enhanced ventilation and use of natural lighting (consider eco-designs and big windows)
Increased cases of accidents	Ensure that safety measures are in place
Enhanced security within the campus	Ensure that the design of the buildings have security features e.g. alarm, fire escape system
Risks of early pregnancy	Sensitisation to the students on dangers of early pregnancies and indulging in sexual activities
Enhanced management of student's properties	Provide lockable facilities (lockers) for individual students to store their items (as not the University have students which stay off campus and have challenges to keep their belongings during the day and examination times). Most of them tend to keep their bags in the offices of the lecturers. Provide big office facilities for lecturers and lockable cabinets.
Enhanced safety of the students	The building should have emergency fire exist provision apart from the elevators (as most for the is building within the campus do not have such facilities and in case of fire, these can lead to more casualties) The buildings should be disability friendly (provide ramps and elevators) Designs should have non-slippery floors (as observed in most buildings they put slippery porcelain tiles which are not good for the public places) and easy to clean and maintain. Provide safe stairs and which can easily be used not posing safety risks

A2.7: Anticipated Issues by the Lilongwe City Council

SN	Name	Institution/Designation	Issues Raised	Recommendations
	Lilongwe City Council -Mr. Mkaka	Cleansing Department	*Positive Impacts*	
			Decongestion of Classrooms	Flexible scheduling of classes to make efficient use of the classrooms
			Promote Research and Innovations	Students should be made aware of the laboratories and research facilities; they should also be encouraged in the involvement of research activities
			Promote Development	
			Reduce runoff through the construction of drainages	The Contractor should make sure that there is routine inspection and maintenance of the drains, Educate the students about the importance of responsible water management
			Negative Impacts	
			Increase in noise pollution, Dust emissions which will disturb lessons in classrooms	The Contractor should enforce strict construction working hours to limit noisy activities during class hours. The Contractor should erect temporary noise barriers or screens around the construction site to mitigate the spread of noise, use of sprinkle water to reduce dust.
			Water runoff will increase	The Contractor should make sure that storm water

				drains are constructed.
			Proximity of the facility washrooms and the student cafeteria can lead to poor sanitation.	The Contractor is advised to construct a sewer line, Contractor should have large pipe diameters to avoid pipe blockage. The area should have mobile toilets.
			Accidents of workers during construction	Workers should be encouraged to wear PPEs
			Negative Impacts	
			Loss of trees might contribute to floods since they are near Lilongwe River	The Contractor should encourage workers and students to replant the trees after construction around the area.
				Construction of storm drains might help in reducing the runoff.
			Increase in Waste	Construction of a waste bank around the area which will promote waste separation and recycling.
			Positive impacts	
			Less congestion in classrooms	
			Increase in the number of professionals that will fill the gaps in healthy sector	

Annex 3: GBV Management Plan

The prevention of GBV is a multifaceted effort which should focus on the following:

1. Women empowerment or agent of change
2. Women's participation and capacity to influence decision making.
3. Women economic empowerment
4. Increased access to sexual and reproductive health and rights
5. Incorporate men and boys in efforts (as perpetrators, victims, and agents of change)
6. Social gender norms and behaviour transformation (challenging gender stereotyping)

Specific prevention measures have been included in the GBV Management plan to ensure the implementation of actions in this regard and to allow for close monitoring of the Contractor.

Activities	**Action party**	**Responsibilities**
Stakeholder engagement	KUHeS PIU; District Social Welfare Office (DSWO)	• Identify GBV service providers in the area. • Identify vulnerable groups within the community. • Inform community members about the details of the Project and the GBV risks associated with the project. • GBV training including what to do in case of grievance.
GBV training for GRC, Contractor and staff, consultants, and adjoining community members	KUHeS PIU; Contractor; DSWO	• Training and sensitisation of all workers associated with the Project on GBV and how the project can contribute to GBV risks. • Training and sensitisation of adjoining communities on GBV risks, channels to report GBV incidents and services available for GBV survivors.
Codes of conduct signed and understood	KUHeS PIU; Contractor	• Ensure requirements in the CoCs are clearly understood by those signing. • Have the CoCs signed by all those with physical presence in the site. • Train construction workers on the behaviour obligation under the CoCs.
Handling GBV complaints (including support of survivors)	GRM	• Grievance redress committees to ensure confidential complaint uptake mechanisms are in place. • The GBV cases should be immediately reported to the Police (Victim Support Unit), District Social Welfare Office, psychosocial support institutions working in the project area or district.
Provision of separate, safe and easily accessible facilities for women and men working on the site	KUHeS PIU; Contractor	• Ensure construction sites have separate facilities like toilets and/or bathrooms for men and women.

Monitoring and reporting	KUHeS PIU; Contractor; DSWO	• Selection of monitoring indicators (such as: No. of reported cases of GBV; Resolved cases and time it took to address the complaints, No. of workers that have attained GBV training courses; No./percentage of workers that have signed CoC and No. of GBV cases that were referred to the GBV service provider). • Ensure new risks are uncovered and mitigated.

Annex 4: Code of Conduct for Contractor

A Contractor under the SAVE will be required to prepare a Code of Conduct in relation to child protection, among others, that they shall follow when undertaking construction works. These rules shall form part of the assessment criteria when selecting the Contractor. A satisfactory code of conduct will contain obligations on all project staff (including sub-Contractors, Contractor and day workers) that are suitable to address the following issues as a minimum. Additional obligations may be added to respond to the concerns of the region, location, and project sector, or to specific project requirements. The issues to be addressed include the following.

1. Compliance with applicable laws, rules, and jurisdictional regulations.
2. Protection of children (including prohibitions against abuse, defilement, or otherwise unacceptable behaviour with children, limiting interactions with children, and ensuring their safety in project areas).
3. Sexual harassment (for example, prohibiting the use of language or behaviour towards women or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning, or culturally inappropriate).
4. Violence or exploitation (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favours or other forms of humiliating, degrading or exploitative behaviour);
5. Compliance with applicable health and safety requirements (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment);
6. The use of illegal substances.
7. Non-discrimination (for example on the basis of family status, ethnicity, race, gender, religion, language, marital status, birth, age, disability, or political conviction).
8. Interactions with community members (for example to convey an attitude of respect and non-discrimination).
9. Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer and not open areas).
10. Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favours, are not provided to any person with whom there is a financial, family, or personal connection).
11. Respecting reasonable work instructions (including regarding environmental and social norms).
12. Protection and proper use of property (for example, to prohibit theft, carelessness or waste).
13. Duty to report violations of this Code; and
14. Non-retaliation against workers who report violations of the Code, if that report is made in good faith.

The Code of Conduct should be written in local and plain language, and signed by each worker to indicate that they have:

- Received a copy of the code.
- Had the code explained to them.
- Acknowledged that adherence to this Code of conduct is a condition of employment; and
- Understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities.

Annex 5: Child Safety Management plan

In school committees, there will be many instances that might expose children and young people to construction workers that may lead to child safety risks. These forms of child risks could be in the form of SEA, accidental harm, physical abuse, psychological or emotional abuse and online abuse.

Type of Risk	Management of Risk	Action Party
Recruitment of inappropriate personnel	• Child safety training • Reference checking • Pre-screening interviews • Criminal history checks • Working with children checks • Probation period	Contractor
Grooming	• Code of Conduct • Training for all staff, volunteers, leaders etc.	Contractor, District Social Welfare Office
Use of images or video of children and young people without parental consent	• Code of Conduct. • Training for all staff, volunteers, leaders etc. • Photo and video policies.	Contractor
Misconduct unreported and failure to address behaviour surrounding misconduct	• Training for all staff, volunteers, leaders etc. • Code of Conduct and child protection policies. • Procedures and protocols responding to misconduct.	Contractor
Unsafe environment leading to occurrence of accidents	• First aid kit must be readily available on site. • Appoint first aid officers. • Conduct risk assessment of all construction activities and identify risks management options.	Contractor

Annex 6: Covid-19 Construction Site Prevention Guidelines

The proposed construction activities are likely to continue during the restrictions likely to be in place due to Covid-19. Contractors and sub-Contractors operating during the Covid-19 pandemic should ensure all possible steps are taken to protect their workforce and to minimise the spread of the infection. This guidance is based on WHO's key messages for infection prevention and control and illustrates some basic measures and principles to be followed in this scenario. This guidance does not encompass all aspects of health and safety and should be seen a complement of standard health and safety policy in place for all construction projects, rather than a standalone document. The main underlying approaches are:

- Reduce access to site.
- Adapt work plan and activities to reduce close contact.
- Increase overall level of hygiene of the site.
- Prioritise health and safety of staff, workers, and their surrounding communities; and
- Increase awareness of the workforce.

Access to Construction Sites

- Only essential visitors (workers, supervisors, and managers) should be allowed on site.
- Programme/monitoring visits should be reduced to the minimum and should be planned when workers are not on site (i.e. lunch or prayer time);
- Fence off the construction site to ensure that no one can enter or approach workers without authorisation.
- The entry and exit gates should be marked and guarded.
- The body temperature should be measured for all individuals entering the site.
- Allow enough space for people to queue safely at the entrance of the site while they wash their hands and get screened.
- Ensure there are sufficient hand-washing stations at the entrance and that they have water and soap, as well as clearly display signs requesting persons to wash their hands.
- Provide adequate handwashing stations with water and soap or an alcohol-based hand sanitiser (min. 60% alcohol). Ensure that water and soap are regularly topped up.
- The handwashing facilities should be cleaned regularly during the day to establish a clear cleaning plan.
- Anyone falling into one of the following categories should not be allowed on-site:
    - Has a family member suspected of Covid-19 living in the same household or self-isolating, or if they had close contact with a confirmed Covid-19 patient in the previous two weeks. S/he should not report on site and self-quarantine at home for two weeks.

    - Is showing one or more symptoms related to Covid-19 (high temperature, new persistent cough, shortness of breath). S/he should not report on site, stay home and self-isolate or seek medical care in case of severe symptoms.
    - Is a vulnerable person (by virtue of age, clinical/health condition or pregnant).
- All persons should wash or clean their hands before entering and leaving the site.
- Workers should be encouraged to reach the site using individual modes of transportation and avoid public transport when possible.

During construction

- An orientation on Covid-19 should be provided to all workers, including description of the disease, symptoms, transmissibility, severity and WHO's key prevention messages to be followed on site, public spaces as well as in their homes.
- Prevention messages should be printed and clearly displayed on site. Consider providing an additional printed copy of the key prevention messages for all workers to disseminate in their families (and communities).
- Workers should be clearly informed on protocols to follow in case they themselves or their family members get sick.
- To the most possible extent, workers should always maintain a physical distance of 2 metres from the others. Performing activities that must be conducted in close proximity should be avoided when possible. If such activities occur, workers should wear masks.
- If possible, construction crews should be segregated and tasks should be allocated so that they do not overlap. Crew shifts should also be established for break, lunch, and prayer times.
- If a worker develops Covid-19 symptoms on site, the following actions should be followed:
    - Avoid touching anything.
    - Cough and sneeze into a tissue and put it in a closed bin or cough and sneeze in their flexed elbow when they do not have tissues.
    - Return home and self-isolate or seek medical care in cases of severe symptoms.
    - All surfaces and tools that s/he may have recently touched should be cleaned and disinfected.
- In spaces where queuing may occur (including latrines and hand-washing stations), consider marking a safe distance of 2 metres.
- On-site meetings should always be avoided. Instructions to workers should be provided in open spaces to maintain physical distance.
- When receiving and unloading goods and construction materials, workers should always maintain their distance from drivers. When possible, the drivers should remain in their vehicles. If drivers must unload the goods for safety reasons, they should do so without the help of workers, and they should wash or clean their hands before and after. Any contact between deliverers and receivers should be avoided (including delivery papers and pens for signatures). It is recommended that everyone needing to sign paperwork has their own

pen or wash their hands afterwards. Advice workers to wash their clothes frequently (daily if possible

Annex 7: Chance Find Procedures for SAVE Project

Ppurpose of the Chance Find Procedure

The chance find procedure is a project-specific procedure that outlines the actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation. A chance find procedure, is a process that prevents chance finds from being disturbed until an assessment by a competent specialist is made and actions consistent with the requirements are implemented.

Scope of the Chance Find Procedure

This chance find procedure shall be applied in cases where previously unknown culturally valuable materials are unexpectedly discovered during the SAVE Project implementation. This procedure is applicable to all activities conducted by personnel, including Contractors, which have the potential to uncover a heritage item or site. This procedure details the actions to be taken when a previously unidentified and potential heritage item or site is found during construction activities. The procedure outlines the roles, responsibilities, and response times required by both the project staff and any relevant heritage authority.

Induction or Training

All personnel, especially those working on earth movements and excavations, are to be inducted on the identification of potential heritage items or sites and their relevant actions with regard to this procedure during the project induction and regular toolbox talks.

Chance finds procedure.

If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

1) Stop all works in the vicinity of the find, until a solution is found for the preservation of these artefacts, or advice from the relevant authorities is obtained.
2) Immediately notify the Foreman. The foreman will then notify the construction manager and officers responsible for the environmental and social safeguards.
3) Record details in the incident report and take photographs of the findings.
4) Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities take over.
5) Preliminary evaluation of the findings by archaeologists. Archaeologists must perform a rapid assessment of the site or determine its importance. Based on this assessment, an appropriate strategy can be implemented. The significance and importance of the findings should be assessed according to various criteria relevant to cultural heritage, such as aesthetic, historic, scientific, or research, and social and economic values of the find.

6) Sites of minor significance (such as isolated or unclear features and isolated finds) should be recorded immediately by the archaeologist, thus causing a minimum disruption to the Contractor's work schedule. Once completed, the results of all archaeological studies must be reported to the Ministry or Agency.
7) In the case of significant findings, the Ministry or Department (responsible for Protection of National Heritage or Archaeological Resources) should be informed immediately and in writing within seven days from the find.
8) The on-site responsible officer should provide the heritage team with photos and other information relevant to the identification and assessment of the significance of heritage items.
9) The Ministry or Department must investigate this fact within two weeks of the date of notification and provide responses in writing.
10) Decisions on how to handle the findings should be made by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance), conservation, preservation, restoration, and salvage.
11) Construction works could be resumed only after permission is granted by the responsible authorities.
12) If no response is received within the 2-week period mentioned above, this is considered authorisation to proceed with suspended construction works.
13) One of the main requirements of this procedure is record-keeping. All finds must be registered. Photo log, copies of communication with decision-making authorities, conclusions and recommendations/guidance, implementation reports - kept.

Additional information

Management options for archaeological site

✓ **Site avoidance**: If the boundaries of the site have been delineated attempt must be made to redesign the proposed development to avoid the site. (The fastest and most cost- effective management option)

✓ **Mitigation**: If it is not feasible to avoid the site through redesign, it will be necessary to sample it using data collection program prior to its loss. This can include surface collection and/or excavation. (The most expensive and time-consuming management option.)

✓ **Site Protection:** It may be possible to protect the site through the installation of barriers during the time of the development and/or possibly for a longer term. This could include the erection of high visibility fencing around the site or covering the site area with a geotextile and then capping it with fill. The exact prescription is site-specific.

Management of replicable and non-replicable heritage

Different approaches apply to replicable and non-replicable heritage. Replicable heritage, where tangible cultural heritage that is replicable and not critical is encountered, mitigation measures will be applied. The mitigation hierarchy is as follows:

- Avoidance.
- Minimisation of adverse impacts and implementation of restoration measures in situ.
- Restoration of the functionality of cultural heritage in different locations.
- Permanent removal of historical and archaeological artefacts and structures.
- Compensation of loss, minimisation of adverse impacts, and restoration were not feasible.

Non-replicable heritage

Mostly, cultural heritage is best protected by in situ preservation since removal is likely to result in irreparable damage or even destruction of cultural heritage. Non-replicable cultural heritage must not be removed unless all the following conditions are met:

- There are technically or financially feasible alternatives for its removal.
- The overall benefits of the project conclusively outweigh the anticipated cultural heritage loss from removal; and
- Any removal of cultural heritage sites must be conducted using the best available technique advised by the relevant authority and supervised by an archaeologist.

Human Remains Management Options

The handling of human remains, believed to be archaeological in nature, requires communication according to the procedure described above.

There are two possible courses of action:

✓ **Avoid:** The development project is redesigned to completely avoid the found remains. An assessment should be made as to whether the remains may be affected by residual or accumulative impacts associated with the development, and properly addressed by a comprehensive management plan.

✓ **Exhume:** Exhumation of the remains in a manner considered appropriate by decision makers. This will involve the pre-determination of a site suitable for the reburial of the remains. Certain ceremonies or procedures may need to be followed before development activities are recommended.

Annex 8: Proposed Site Pictures

Annex 9: Environmental and Social Screening Report

KAMUZU UNIVERSITY
OF HEALTH SCIENCES

REPORT ON ENVIRONMENTAL AND SOCIAL SCREENING EXCERCISE FOR THE PROPOSED CONSTRUCTION OF TEACHING COMPLEX AT KAMUZU UNIVERSITY OF HEALTH SCIENCES (KUHeS)

OCTOBER 2022

REPORT ON ENVIRONMENTAL AND SOCIAL SCREENING EXCERCISE FOR THE PROPOSED CONSTRUCTION OF TEACHING COMPLEX AT KAMUZU UNIVERSITY FOR HEALTH SCIENCES (KUHeS)

1.0. Introduction and Background

The Kamuzu University of Health Sciences (KUHeS) was established on 4th May 2021 through a merger of Kamuzu College of Nursing (KCN) and College of Medicine (COM), former constituent Colleges of the University of Malawi (UNIMA). KCN started training professional nurses and midwives in 1979 whilst COM started training medical doctors and other allied health professionals in 1991. To date, both institutions have contributed immensely to the delivery of higher education and health services in the country.

Through the SAVE Project resources, KUHeS will;

a) Supporting Increased Access to Skills Development Programs in Higher Education

b) Improve female participation in tertiary education through a combination of demand- and supply-driven mechanisms.

c) Promote the use of digital technology at a system level and in the development and implementation of training programs in priority areas of the economy.

d) Focus on ensuring that learning can continue through crises, like the current COVID-19 pandemic, by building the tertiary education system's capability to provide distance education and other information technology-enabled learning for students

The proposed site is within the university premise, the site lies adjacent Classrooms and faces the New Cafeteria

The screening team was Informed by KUHeS Environmental and Social Safeguard that the there is potential of a few existing services running across the site mainly water and possibly Sewerline but all these will be moved to accommodate the construction works. However, the sewerline was already relocated by other existing projects. The total land size to be used for construction is currently estimated to ,5 hectares. The team was also officially informed that the land allocated for the project is entirely owned by KUHeS and is within the KUHeS Lilongwe campus hence there are no any possibilities of land conflicts issues that may be expected. Additionally, the operations will wait for the ESIA clearance certificate from EAD.

Figure 1: Part of the proposed construction site

In line with the Environment Management Act of 2019 and Guidelines for Environmental Impact Assessment (EIA) in Malawi of 1997, The District Environmental officer assisted to undertake an environmental and social screening of the proposed construction site on 18th August 2022. The purpose of the exercise was to identify and evaluate potential environmental and social impacts of the proposed construction activities by taking into account issues such as the type and scale of the project, the nature and magnitude of the potential environmental and social risks and impacts, the environmental and social sensitivity of the project location and the capacity and commitment of the district and local communities to manage the environmental and social risks and impacts in a manner consistent with the national environmental legislation. The screening exercise was also aimed at appreciating how stakeholders including members of staff and students have been involved in the development of the proposed project.

The screening exercise also involved preliminary stakeholder mapping aimed to identify the critical stakeholders and activities to be disrupted by the proposed construction activities.

2.0. Approach and Methodology

The focus of the screening exercise was to undertake initial scoping of potential environmental and social impacts of the proposed construction project and determine the type of environmental

and social assessment to be conducted by project Proponent. To achieve these targets, the following methodology was employed:

2.1. Step 1: Surveys of the project proposed site

Field survey, involving officers from Lilongwe District Environmental Officer, Malawi Environmental Protection Authority (MEPA) and Officials from the Project Implementation Unit (PIU) together with KUHeS Environmental and Social Safeguard, was conducted. The objective of the site survey was for the team to appreciate physically the nature of the identified project site location. The survey also aimed at identifying the environmental and social setting of the area which is key in identification of project related impacts and their enhancement and mitigation measures.

Figure 2: Manholes leading to main public Sewer line likely passing through the project site

Figure 7: vegetation observed on project site

Figure 4: An ablution block for the New Cafeteria close to the project site

3.0. Identified Positive and Negative Impacts of the Construction Site

3.1 Potential Beneficial Socio-Economic Impacts the projects

The proposed construction of the complex in line with the objectives of the SAVE project its associated infrastructure activities, is expected to significantly have socio-economic impacts follows:

- The Construction project will provide employment opportunities to local people through recruitment of both skilled and unskilled labour force
- The project will result in promotion of skills and knowledge for unskilled labor force through on job trainings;
- The project will enhance creation of business opportunities from both the beneficiaries of employment and the communities through selling of different items and materials.

3.2 Potential Negative Impacts associated with the project

Significant negative environmental and social impacts would emanate from the construction project. These include:

- Clearing land for the construction of the lecture theater may result in loss of trees and vegetation;
- Soil erosion resulting from increased surface runoff due to excavation activities and civil works associated with the construction activities;
- Generation of particulate matters (especially dust) during excavation.
- Potential for increase in the prevalence rate of HIV and AIDS, Covid-19 and other communicable diseases in the area as a result of increased incidents of interaction between workers, and communities nearby;
- Noise pollution from machinery and site activities;
- Potential Sexual harassment; women been forced to have sex with project staff in exchange for employment and workers abusing young girls from surrounding communities;
- Potential for Increase generation of nonhazardous and hazardous liquid and solid waste.

4. Outcomes of the Screening exercise

The following were observed after the screening process:

a) There is a lot of fully grown natural and exotic trees on the proposed site and the project poses a risk of having them cleared and losing a lot of them
b) The site has services such as sewer line passing through it which risk potential for spillage of waste substance during construction

5.0. Recommendations and Way forward

The following key issues are recommended to be done before and in the course of the ESMP development:

- KUHeS to provide to the drawing details of the campus indicating existing services to the Consultant before designs are worked on so that designs should take into account how the existing services will be treated.
- The Design consultant to consider saving and preserving as many trees as possible to minimise cutting of trees

Environmental screening form

KCN

Environmental and Social Screening Form for Screening of Potential Environmental and Social Impacts of SAVE activities

Government of the Republic of Malawi

Ministry of Education, Science and Technology

Skills for a Vibrant Economy (SAVE) Project

Environmental & Social Screening Form

Guidelines: Site inspection of project site. The evaluation results to be a consensus of at least three officials.

Project Name: Teaching & DDL Complex	District.: Lilongwe
Project Location: KUHES – KCN	Nature/Size 2,500 m²
Name & Signature of Evaluator: B. CHINTHA I. KALUENDO T. NKOMA	Date of Field Evaluation 15/08/2022

		Appraisal	Stage of EHS potential impact/risk/issue		Significance	Potential Mitigation Measures
		Yes / No	Construction	Operation	Low, medium, high	
1.0	Environmental Screening					
	Will the project generate the following impacts					
1.1	Loss of trees/ vegetation/ biodiversity	Yes	✓		Low	-Limit the clearing areas
1.2	Soil erosion/siltation in the area	NO				
1.3	Pollution to land- diesel ,oils	NO				
1.4	Dust emissions and increased particulate matter	Yes	✓		Low	-Water work area -Provisim of PPE -Fencing
1.5	Solid waste generation	Yes	✓	✓	Low	-Provide bins -Re-use & Proper disposa
1.6	Liquid wastes and waste water generation	Yes	✓	✓	Medium	-Connect to relevant disposal system -Installing Separat tm.
1.7	Introduction of hazardous chemicals and wastes	Yes		✓	Low	-Proper Storage

1.8	Borrow pits and pools of stagnant water	NO				
1.9	Rubble/heaps of excavated soils	Yes	✓		Low	Re-use the Soil
1.10	Invasive tree species	NO				
1.11	Long term depletion of water	NO				
1.12	Reduced flow of water sources	NO				
1.13	Nuisance from noise and vibrations	Yes				-Limit noisy activities -Controlled use of low work
1.14	Loss of soil fertility	NO				
1.15	Incidence of flooding	NO				
1.16	Increased Energy use	Yes	✓	✓	Low	-Use of energy saving
1.17	Increased demand and/or portable water use	Yes	✓	✓	Low	Provision of water tanks
1.18	Increase emergence of man-made and natural disasters e.g. fires etc.	No				
2.0	Cultural, Social and Economic Screening					
	Will the project generate the following negative social and economic impacts?					
2.1	Loss of land to households	No				
2.2	Loss of properties – houses, structures	No				
2.3	Loss trees, fruit trees by households	No				
2.4	Loss of crops by people	No				
2.5	Loss of access to river/forests/grazing area	No				
2.6	Impact cultural site, graveyard land	No				
2.7	Conflicts over use of local water resources	No				
2.8	Disruption of important pathways, roads	No				
2.9	Loss communal facilities –churches	No				
2.10	Loss of livelihood system	No				
2.11	Blockages to footpath/roads	No				

2.12	Bring resettlement issues	NO				
2.13	Spread of HIV/AIDS and other STIs	Yes	✓		Low	Sensitization meetings Provide Condoms
2.14	Spread of Covid-19	Yes	✓		Low	· Ensure Preventative measu
2.15	Occupational safety and health issues	Yes	✓	✓	Medium	- Provide PPE - First Aid Kits, Signag
2.16	Increase exposure of Hazardous chemicals and wastes	Yes		✓	Low	- Code of Conduct - Signage
2.17	Safety issues with respect to poor building designs	NO				
2.18	Exclude other users especially disabled and vulnerable with respect to poor building designs	NO				
2.19	Increased GBV and SEA	Yes	✓	✓	Low	Sensitization & GRM Women employment
2.20	Increased violence against children	Yes	✓		Low	Avoid employing the under age

Overall evaluation of Screening Exercises.

The results of the screening process would be either the proposed sub - projects would be exempted or subjected to further environmental and resettlement assessments. The basis of these options is listed in the table below:

Review of Environmental Screening	Tick	Review of Social and Economic Screening	Tick
1. The project is cleared. No serious impacts. (When all scores are "No" in form)), though the bids/contracts still would have standard EHS clauses		1.The project is cleared. No serious social and economic impacts, (Where scores are all "No", "few" in form) though the bids/contracts still would have standard clauses on addressing emerging social and economic issues	
2. There is need for further assessment -ESMP or ESIA (when some score are "Yes, High" in form), as determined by MEPA	✓	2.There is need for resettlement/ compensation. (When some score are "Yes, High" in form) including need for ESMP or ESIA as determined by MEPA	
Approval by Environmental officer/		**Approval by Director of Planning and Development**	
Name: Tadala Sendoza		Name: Willard Chimu	
Signature Date 22/08/22		Signature Date	

NOTES:

1. The DPD shall ensure that a completed form is filed within project file immediately after endorsement. Environmental Officer may keep a duplicate.
2. Project Management Committee will maintain a copy of completed form
3. It is the duty of Director of Planning and Development and Environmental Officer to ensure mitigation measures outlined in form are implemented.
4. An Environmental Officer shall prepare a monthly monitoring report on implementation of mitigation measures.
5. The mitigation measures shall be sourced from expert knowledge, stakeholder consultations, EHS guidelines etc.
6. The bids/contracts still would have standard EHS clauses
7. The screening form will be updated prior to use, to reflect a more final set of EHS potential impacts/risks/issues

Annex 10: ESIA Study Team

Name of Expert	Role in the project	Qualifications	Responsibilities
• Benjamin Kamanga	Team Leader	MSc in Environmental Science, 2013, University of Malawi Master in Business Administration 2022, University of Malawi BSc in Environmental Science, 2009, University of Malawi	• Lead team in developing a comprehensive ESMP through managing the team's desk reviews and field work, including public consultations and stakeholder consultations. • Coordinating meeting with the Client • Edit, or give feedback on, chapters of ESMP produced by other research assistants and consultants.
• Mr Samuel Mkandawire	Social Expert	BSc in Social Science	• Stakeholder Engagement and Consultation, Social Impact Assessment and Analysis, Social Safeguards and Management Plans, and review the Social Environment of the area and determine and analyse socio-economic impacts, which will be associated with the project and will participate in the preparation of the ESMP. Establish the extent of implementation of gender equality and equity, Review applicable legal framework. • Gender Analysis and Data Collection, Gender-Specific Impact Assessment, Gender-Responsive Stakeholder Engagement, and Gender-Responsive matrices
• Mr Julius Kalonga	Biodiversity Expert	BSC in Aquaculture	• Carrying out biodiversity studies