

## 1. INTRODUCTION

The University of Nairobi is the premier university in Kenya set up in 1970. Overtime, the University has grown not only in student admission, but also in the number of courses, processes, products and activities it is undertaking, with over 50,000 students and a staff compliment of over 5,000.

The University's Vision is ***%A world-class university committed to scholarly excellence,*** while its Mission is ***%To provide quality education and training and to embody the aspirations of the Kenyan people and the global community through creation, preservation, integration, transmission and utilization of knowledge.***

The Core Values are: ***freedom of thought and expression; innovativeness and creativity; good corporate governance; team spirit and teamwork; professionalism; quality customer care; responsible corporate citizenship and strong social responsibility, and; respect for and conservation of the environment.*** In 2008, the University attained ISO 9001:2000 certification being a clear position of intent towards its stated vision and mission.

In 1985, The University of Nairobi through an Act of Parliament established six colleges, namely:

- i. The College of Agriculture & Veterinary Sciences (CAVS)
- ii. The College of Architecture and Engineering (CAE)
- iii. The College of Biological and Physical Sciences (CBPS)
- iv. The College of Education and External Studies (CEES)
- v. The College of Health Sciences (CHS)
- vi. The College of Humanities and Social Sciences (CHSS)

These colleges operate from various campuses:

- 1) **Main campus** . this is situated near the City Centre and bounded roughly by Harry Thuku Road on the East, University Way and Nyerere Road to the South, Mamlaka Road to the West and Msonga Wai/Nairobi Rivers to the North. Located here are CAE, a large part of CHSS, Central Administration, Jomo

Kenyatta Memorial Library, the Bookshop, School of Journalism, Institute of Development Studies, Institute of Diplomacy and International Studies, Institute of Nuclear Science and Technology, Offices of Common Undergraduate Courses, Board of Post-Graduate Studies, Office of Special Student Advisor, and the majority of Students Halls of Residence and the Central Catering Unit. Construction & Maintenance Department, Transport and Garage Department, Central Stores, and Estates Department are also located at Main Campus.

- 2) **Chiromo Campus** . located some two kilometers from Main Campus off Riverside Drive and across Msonga Wai River. This campus is home to CBPS within which fall the School of Biological Sciences, School of Computing and Informatics, School of Mathematics, School of Physical Sciences and Pre-clinical Medical and Veterinary Department. Chiromo Funeral Home, Halls of Residence and Science Workshop are also located here.
- 3) **Upper Kabete Campus** . located some thirteen kilometers from Main Campus, it's situated close to the North-Western City boundary off Kapenguria Road. This is home to CAVS which accommodates the Clinical Departments of the Faculty of Veterinary Medicine and the Faculty of Agriculture. The Field Station where agricultural experiments are carried in the open fields or green houses are located here. The Veterinary Farm is located four kilometers to the West of the Campus along Fort Smith. The college also has halls of residence, a clinic, several tuck shops and photocopying facilities.
- 4) **Lower Kabete Campus** . located along Lower Kabete Road some ten kilometers from Main Campus, Lower Kabete Campus houses the School of Business. Besides the halls of residence, the campus has the SWA catering services, clinic, privately-run eateries, photocopying services, internet cafes and tuck shops.
- 5) **Kikuyu Campus** . Houses College of Education and External Studies, located approximately twenty four kilometers from Main Campus. The college operates several regional and sub-regional training centers throughout the country. There are several halls of residence, a clinic, a printing press, tuck shops and privately-run eateries.

- 6) **Kenyatta National Hospital Campus** . located about five kilometers from Main Campus within Kenyatta National Hospital where the College of Health Sciences is housed. School of Nursing Sciences, Center for HIV Prevention and Research, Institute of Tropical and Infectious Diseases (UNITID), School of Medicine, School of Pharmacy and School of Dental Sciences are in this campus. It has several halls of residence, laboratories, catering services and tuck shops.
- 7) **Parklands Campus** . Located along Forest Road, approximately three kilometers from Main Campus and is home to the School of Law. There are tuck shops, catering services and photocopying facilities apart from residential houses.
- 8) **Kenya Science Campus** . Located about eight kilometers from Main Campus and houses Bachelor of Education (Science) programmes. There are residential houses in this campus, halls of residence, laboratories, catering services and a number of tuck shops.
- 9) **Mombasa Campus** . where part of CHSS operates, it is located at Uni-Plaza Building along Moi Avenue; Jubilee Building and Bandari College.
- 10) **Kisumu Campus** . where part of CHSS & CEES operate. It is located in Mega City, British Council Building and Kisumu Plaza.
- 11) There are also field stations (research stations, also known as our stations) in various parts of the country as well as Extra Mural Centres. The field stations are: Kibwezi Dryland Station; Malindi Farm (underdeveloped); Moana Marine Research Station; Nyeri Extra Mural Centre Plot (undeveloped); Kakamega Extra Mural Centre Plot (undeveloped); Tigoni Guest House; Machaga Field Station. The Extra Mural Centres are: Mombasa; Meru; Nyeri; Garissa; Nakuru; Thika; Bungoma; Busia; Kisii; Kapenguria.

University of Nairobi owns and operates an extensive portfolio of physical assets that include land, buildings, plant and equipment as well as motor vehicles utilized in conjunction with human resource to facilitate the realization of the vision and mission through teaching, research and corporate social responsibility.

In addition, the University owns 630 rental units located in various places within the campuses and elsewhere. The University also owns a fleet of 207 motor vehicles currently in different states of maintenance.

As at June 30<sup>th</sup> 2010, the total value of University assets was **Ksh 39.674 billion**, of which 61.4%(Ksh 24.388 billion) represented land values and the balance of 38.6 %(Ksh 15.286 billion) represented buildings, plant, machinery, equipment and motor vehicles.

In order for the University to achieve its stated vision and mission, and the core values, it requires physical facilities in addition to human resources. These facilities need to be retained or maintained in a state that enables the University to execute its mandate for research, teaching, creativity, and professionalism. This document provides a management framework to ensure that the extensive portfolios of building assets that the University owns and operates are maintained effectively to support the University's strategic objectives. The document also presents a consistent approach to the maintenance of assets while maximizing their useful life and provision of best service, and defines the roles and responsibilities of stakeholders in the maintenance and preservation of physical assets.

## **2. MAINTENANCE POLICY**

### **2.1. Need for a Maintenance Policy**

The purpose of a Maintenance Policy is to outline the values and standards for maintenance, funding needs for maintenance, as well as the roles and responsibilities of stakeholders in the maintenance and preservation of University of Nairobi physical assets.

The objectives of a Maintenance Policy are therefore to:

- 1) Ensure that assets are adequately maintained.
- 2) Ensure that associated risks are effectively managed.
- 3) Ensure statutory compliance (Public Health Act, Environmental Management and Coordination Act, Occupational Safety and Health Act, etc).
- 4) Ensure that the physical assets perform effectively and efficiently throughout their service life.
- 5) Specify minimum requirements for the management of maintenance.
- 6) Ensure that appropriate decisions are made in selecting maintenance strategies.
- 7) Ensure that a sound basis exists for the allocation of maintenance funds.
- 8) Clarify maintenance responsibilities for the physical assets among stakeholders.

The Maintenance Policy should relate to the University's vision, mission, and core values while operating within statutory requirements and in tandem with other university policies such as the Quality Policy Statement, Environmental Policy, Anti Corruption Policy, etc as appropriate. The policy relates to maintenance of buildings, grounds, plant and equipment with regard to their maintenance standards, health and safety, security and access, and working in occupied premises. It envisions identification and prioritization of maintenance needs, preventive maintenance and planning cycle, routine servicing requirements and cycles, the tasks done in-house and the ones outsourced. Besides, it looks at staffing needs and the structure in which they operate and the resultant management.

## 2.2 Regulatory Framework Governing Asset Ownership and Maintenance

In order for a Maintenance Policy to adequately meet the needs of University, it not only has to meet the requirements within the setting from which it operates, but also be within the statutory and other regulatory frameworks within which the policy applies. This draft policy draws from a number of various regulatory frameworks such as:

- a. **The University of Nairobi Act (UoN 1985)** . Especially Management of Assets, administration of property and funds of the University, and the University of Nairobi Statutes, 1991.
- b. **The Public Health Act** Ę Relating to infected buildings, inspection and disinfection of such buildings, destruction of any building, bedding, clothing or other articles which have been exposed to infection. It requires that buildings should be constructed and maintained in a manner in which they are neither dangerous nor injurious to the health and safety of occupants.
- c. **The Environmental Management and Coordination Act (EMCA)** Ę Relating to Protection of forest, Conservation of energy and planting of trees or woodlots, Environmental Impact Assessment and audit, Environmental monitoring, Water and pollution prohibition, Discharge of effluents, Air quality standards, Standards for waste, Prohibition against dangerous handling and disposal of wastes, Hazardous wastes, Regulations of toxic and hazardous materials etc., Prohibition of discharge of hazardous substances, Chemicals and materials or oil into the environment and spiller's liability, Offences relating to pesticides and toxic substances, Standards for noise, Environmental restoration, Conventions, Agreements and treaties on environment.
- d. **The Occupational Safety and Health Act (OSHA) 2007** Ę Relating to Safety and health audits, Prohibition against creation of hazards, General duty of persons in control of certain premises in relation to harmful emissions into atmosphere, Occupational diseases, Research and related activities, Cleanliness, Overcrowding, Ventilation, Lighting, Drainage of

floors, Sanitary conveniences, Machinery safety, General provisions on safety including precautions in places where dangerous fumes are likely, Chemical safety, General provisions on welfare, Special provisions on health, safety and welfare, Special applications (especially on premises in which steam boilers, hoist or lifts are used) and Safety and health regulations.

- e. **The Local Government Act (LGA)** Relating to Sewerage and drainage; Water supply; Works of the supply of electricity, light, heat and power; Houses; and Trunk roads, which must be carried out and maintained to the required standards for health and safety.
- f. **The Public Procurement and Disposal Act 2005** with respect to General procurement rules, Tendering, Alternative procurement procedures, Compliance, Disposal of stores and Equipment ;and subsidiary legislation on the Public Procurement and Disposal Regulations (2006) and the Public Procurement and Disposal (Public Private Partnerships) Regulations (2009).
- g. **ISO 9001:2008** The University was certified by International Organization for Standardization (ISO) 9001: 2008 in the year 2008. This is a Quality Management Standard whose key requirements include:
  - i. A set of procedures that cover all key processes in the business;
  - ii. Monitoring processes to ensure they are effective;
  - iii. Keeping adequate records;
  - iv. Checking output for defects, with appropriate and corrective action where necessary;
  - v. Regularly reviewing individual processes and the quality system itself for effectiveness; and
  - vi. Facilitating continual improvement

ISO 9001 registration implies a clearly defined process including that of maintenance which this Maintenance Policy draft addresses.

### 2.3 Maintenance Policy Committee

The Maintenance Policy Committee was appointed vide the Vice-Chancellor's letter dated March 2, 2010 to formulate a Maintenance Policy for the University of Nairobi.

The members appointed to the Committee were:

1. Prof Paul M. Syagga - School of the Built Environment  
(Chair of The Committee)
2. Dr. S. M. Masu - Manager, Construction & Maintenance
3. Mr. T. M. Thuita - Ag. Estates Manager
4. Dr. T. C. Anyamba - Dept. of Architecture and Building Science
5. Prof. D. N. Mungai - Dept of Geography & Environmental Studies
6. Dr. E. Omwenga - Director, ICT (Represented by Mrs. Almaz Yohannes-Mbathi)
7. Mr. J. M. N. Kanyugo - Chief Technologist, Civil & Construction Eng.

The Committee co-opted with approval members from Procurement, Transport & Garage and Electrical & Information Engineering namely:

8. Dr. (Eng.) J. Ogola - Transport & Garage Coordinator
9. Mr. J. M. Mokaya - Procurement Manager
10. Mr. D. Munyasi - (Represented by J. Aduol) Dept. of Mechanical Engineering
11. Mr. B. Chomba - Electrical & Information Engineering
12. Ms. Elizabeth Gachithi - Finance Department

The Construction & Maintenance Department provided the secretariat staff namely:

13. Mr. F. W. Kachero - Secretary
14. Ms. J. W. Nganga - Typing services

The Committee also utilized the services of eighteen (18) Research Assistants from various disciplines to carryout physical assets and interviews and the services of two



other persons mainly for the purposes of analyzing data collected from the interviews and physical inspections of the assets namely:

15. Hudson Lusisa - (Dept. of Civil & Construction Engineering)
16. Z. O. Kebaso - (Dept. of Mechanical Engineering)

## **2.4 Terms of Reference (TOR)**

The Mandate of the Committee was to formulate a University Maintenance Policy (Annexe 2). In order to address this broad mandate, the Committee further refined these Terms of Reference to include the following:

- Physical facilities: Grounds (including parking lots, farms, civil works, etc.)
- Plant and equipment, (including laboratory and farm equipment )
- Buildings(which include houses, offices and classrooms)
- Transport and garage
- ICT network and infrastructure (including software).
- Information and knowledge resources (which include library facilities).
- Environmental management in relation to maintenance work - Waste Management, Noise, and harzadous waste.

## **2.5 Methodology**

In order to collect the required data for the development of a maintenance policy, the following methodology was adopted:

- a. Literature review of existing information and documents from the University as well as documents from external sources were assembled and studied in order to determine current status of maintenance to establish benchmarks/good practices against which to interrogate maintenance practices at the University of Nairobi.
- b. Developed Instruments used in data collection such as questionnaires and interview guides for the following purposes:
  1. Physical audit of existing assets so as to determine;

- (i) Asset condition assessment (gap between the expected and actual).
- (ii) Consequential impact/risk rating (consequences of postponement).
- (iii) Asset maintenance priority rating (what informs prioritization of actions).

Inspections of the physical facilities were carried out in the major operational areas of all colleges and campuses within and outside Nairobi. However, for a few sites, due to distance and similarity of issues, information was collected from key stakeholders. The following criteria were used in assessing and classifying the conditions of buildings and grounds.

**1) As New** = the fabric, element or building is either new or has recently been renovated; does not exhibit any signs of deterioration.

**2) Minor repairs** = The fabric element or building exhibits superficial wear and tear, minor defects, minor or signs of deterioration to surface finishes and requires maintenance/servicing. It can be reinstated with routine schedule or unscheduled.

**3) Serious repairs** = Significant sections or elements require repair, usually by specialist. The fabric, element or building has been subjected to abnormal use or abuse, and its poor state of repairs is beginning to affect surrounding elements. Backlog maintenance work exists.

**4) Critical repairs** = substantial sections or elements have deteriorated badly, suffered structural damage and require critical repairs, upgrading or replacement. There is a serious risk of imminent failure. The state of repair has a substantial impact on surrounding elements or creates a potential health or safety risk.

**5) Condemn or replacement** = the fabric, element or building has failed, is not operational or deteriorated to the extent that does not justify repairs, but should rather be condemned or replaced. The condition of the element actively contributes to degradation of surrounding elements, or creates a safety, health or life risk.

For plant and equipment the following criteria (**Table 1**) were used for assessment of their conditions.

**Table 1: Asset Condition Classification**

|          | <b>Asset Condition Category</b> | <b>Expected Standard</b>  |
|----------|---------------------------------|---|
| <b>1</b> | <b>Best</b>                     | Asset to be in best possible condition; only minimal deterioration will be tolerated.   |
| <b>2</b> | <b>Good</b>                     | Asset to be in good operational and aesthetical condition, benchmark against industry standards for that particular class of asset. Thus legislative or statutory maintenance must be upheld to ensure the University complies with current legislative requirements and standards. Experimental, diagnostic and ICT equipments fall in this category in terms of international calibration standards |
| <b>3</b> | <b>Reasonable</b>               | Asset to be kept in reasonable condition fully meeting operational requirements.  |
| <b>4</b> | <b>Minimum</b>                  | Condition needs to meet minimum operational requirements only, notably stores, garages, car parks. The physical conditions should not be allowed to fall into class <b>1</b> ( <b>critical repairs</b> ).   |
| <b>5</b> | <b>Holding</b>                  | This is the condition of a condemned building not to be put to any use but must be marginally maintained for purposes of safety pending demolition.   |

2. Interviews/discussions with stakeholders so as to;

- i. Determine maintenance aspirations/expectations.
- ii. Determine maintenance responsibilities.
- iii. Determine maintenance funding levels.
- iv. Determine maintenance strategies.

Several interviews/discussion sessions were held with stakeholders from all colleges who included Principals, Deans, Directors, Chairmen of departments, other members of staff, students' representatives as well as tenants' representatives of University houses.

C. Preparation of the report

This included data analysis using SPSS programme based on physical inspection audits and interviews with various stakeholders. The report includes;

- i. Analysis of current status of university assets
- ii. Analysis of issues and recommendations
- iii. Maintenance policy recommendations

### **3. KEY FINDINGS**

#### **3.1. Grounds and Buildings**

The overall assessment rating for grounds and buildings was carried out in all colleges. The following are key findings emanating from analysis of the questionnaires and participatory discussions with concerned stake holders.

Of the sites audited, 47% (23) reported that they had diagrams of site and/or premises layout. Slightly more than a half of University sites do not have the site/premises layouts which are essential for site/premise maintenance work and during emergency operations.

About 43% (21) of the sites investigated had drainage layout plans. More than a half of University sites do not have the drainage layout plans which are essential for site/premise maintenance work and during emergency operations.

##### **3.1.1 Standard of Maintenance Services**

Maintenance services are not consistent across colleges. It was observed that some colleges are better maintained than others. In some cases staff offices were found to be in very poor state. There are also frequent power outages especially at ADD, CHS and SWA halls of residence and offices, perhaps due to overloading of the transformer and installation equipment.

##### **3.1.2 Maintenance of Academic Buildings and Offices**

There are a number of buildings which are quite old/dilapidated such as the damaged HABRI building (ADD) which has remained so for three years after a tree fell on it, and the School of Pharmacy which has huge gaping cracks that loom disaster any time.

Such structures should be bonded as they pose danger to users. Other buildings are falling into disuse due to lack of routine and programmed maintenance with incessant roof leaks, plumbing and drainage problems, damaged floors, and dirty paint work. Sun breakers (sun shading) on certain buildings such as ADD building are falling down. In most buildings the electrical installations and plumbing systems are a source of concern and cause of interruption in delivery of research and teaching. In some buildings, toilets were designed for one gender (Engineering Block), while the overall utility facilities were intended for a population attending the University in 1956 which is less than a tenth of the current population. Facilities are therefore overused with resultant frequent breakdowns.

In many instances painting and other maintenance works are applied externally to buildings leaving the interior still untidy. And more importantly, outlawed building materials such as asbestos, which is not recommended due to its medical consequences, is still on many University buildings not only as roof coverings but as internal ceilings.

### **3.1.3. Teaching and Office Space**

The office and learning spaces are inadequate in most colleges. For instance College of Health Sciences in particular has very limited space which has made it difficult for the college to provide adequate recreational facilities for students and staff.

There are also great inter-college, inter-faculties and inter-departmental disparities in the provision of furniture in certain offices and lecture halls.

Lack of space at Kikuyu Campus has compromised the admission of external students who normally are accommodated during school holidays. It was reported that these students are accommodated in high schools and mid-level colleges; which makes them feel like they are not part of the University of Nairobi students.

### **3.1.4 Space in SWA & Halls of Residence**

- The halls were designed many years with fixed capacities and no longer meet the current needs which have since increased. For example toilets and bathrooms are insufficient for current populations. All spaces that were meant for other activities such as reading rooms are being converted into sleeping rooms. This further stretches the utility facilities such as washrooms.
- Students cook in the rooms, others have opened laundry and photocopying services and this has not only raised the power bills, but also damaged sockets in the rooms, burnt chairs, blocked drainage pipes and related maintenance issues.
- There is a lot of theft of items such as flush valves etc.

### **3.1.5 Maintenance of Residential Houses**

There is no planned programme for maintenance of houses occupied by staff as tenants of the University. Most of the access roads to the estates are in poor state.

A number of houses have leaking or falling roofs and water leakages from broken pipes, abandoned septic tanks, open drainages and unrepaired sewer pipes. In a few cases, sewage collects in a pit in the estate and is never drained. In some instances tenants have to use toilets to wash utensils because kitchen sinks do not work. In some cases, water storage tanks are needed; in others, after erecting the storage tanks, water does not flow in . rendering the whole exercise worthless. These pose great and serious dangers to health and safety.

Most residential houses are in a state in which they are exposed to insecurity. Remedial actions that have been identified (such as perimeter fencing, street lights) are never implemented or take forever to be. In other cases, a perimeter wall has been constructed but a section left, and this stays so. Painting is rarely done to the University houses, some dating to 1970s. Tree hazard assessment is rarely done; old trees in some of the estates are hanging menacingly and can easily fall.

Tenants are given only seven days in which to move into an allocated house irrespective of the state of the house. The M1 forms process takes very long to

ultimately get required maintenance/repair in a house. Tenants then use their money to repair the houses which is never refunded. It was reported in one case for instance where a tenant used more than KShs. 200,000 to repair a house on being allocated, and to-date this has not been refunded. Similarly, asbestos is still on so many University houses both as roof covering and ceiling despite its known health hazards.

The staff charged with maintenance of houses are quite few and overstretched. Lack of staff implies that the supervision of the casuals is also not adequate. For instance, when the casuals engaged go to site, they sit idle counting days. Allowing casuals to take over the work in houses is not safe.

The management of M1 (maintenance request forms) is disappointing. M1s are filled, sometimes many times for the same activity and take long before they are acted on, if any. This is poor customer relations since the user is never advised about the state of M1 by the maintenance staff.

### **3.1.6. Overall Building Assessment Rating**

The observations made above are complimented by the overall building assessment rating of the physical condition for selected buildings in various colleges and residential houses in various locations (**Tables 3.1 to 3.9 in Annexe 1**). A number of buildings require repairs of one form or another as no building can be described as new or maintenance free. Many buildings require minor repairs to the roofs, doors or floors or a coat of paint. A few buildings such as Hyslop Building, Education Building, Kileleshwa Flats or uncompleted buildings at the School of Business require serious attention to carry out various construction works such as repairs to the roof, drainage of basement water or completion of stalled works. In isolated instances such as the School of Pharmacy the building can only be classified as %holding+ pending demolition as they are structurally unsafe for occupation.

## **3.2. Plant and Equipment Condition Assessment**



**Tables 3.10 to 3.16 in Annexe 2** provide the condition assessment for various plant and equipment found in various college campuses. Equipments in many schools/faculties are old, expensive to maintain and difficult to repair and spares are no longer available in the market. It was reported for instance that laboratory equipment in engineering workshops, science laboratories and medical departments were purchased between 1960s and 1980s. In many cases, there are no technicians to service the equipment, while some of the equipments are obsolete but continue to occupy space in the laboratories.

In some colleges some of the equipments are procured through donor funded projects. When the projects end, the equipment remain for use in the respective colleges/schools/institutes without appropriate funding for routine maintenance, repairs and replacement as well as requisite personnel to service them.

Fire equipment needs attention as well. It was for instance reported that there were several cases of theft of fire fighting equipment. Regular inspection and servicing of fire fighting equipment is necessary in all university facilities.

At Kikuyu Campus, the printing press is an important component of the college. However, the existing ventilation is inadequate which leaves the workers exposed to hazardous fumes from the printing machines. Despite its centrality to the college, its work is frequently frustrated by the Central Stores and Procurement that delay maintenance.

### **3.3. Electrical Installations**

In most of areas visited there were no electrical installation diagrams which were available to ease inspection. For instance, only about 35% of the audited sites had diagrams of ventilation ducting layout. Over 60% did not have. These diagrams are essential for maintenance operations as well as during emergency situations.

In the labs visited in all the colleges, some equipment were found obsolete, their spare parts are not available and therefore cannot be serviced or calibrated. Even for those in use, it was reported that procuring spare parts takes long thus hindering the repair of the equipment and electrical fittings.

**Table 2: Selected Electrical Installations**

| <b>Location</b>               | <b>Building</b>           | <b>Condition</b>   | <b>Remedial Measure</b>  |
|-------------------------------|---------------------------|--|--|
| <b>Central Administration</b> | Administration Block      | Some sections are aged. Incoming room switch gears are old. There are no visible or lit signs to show exit, no smoke detectors.  | Wiring needs inspection and updating of wiring system as appropriate.              |
| <b>UNES</b>                   | Offices                   | The wiring is old and is practically surface which is dangerous.   | Rewiring necessary for the entire building   |
| <b>UHS</b>                    |                           | No major electrical problems, except, acquiring right service man with the knowledge of the equipment to be serviced appears difficult.  | Need for regular maintenance   |
| <b>SWA</b>                    | Kitchens                  | Electrical appliances used in cooking, lighting and other useful services fail frequently.   | Need for regular maintenance   |
|                               | Halls                     | Frequent electrical failures in rooms with possible dangers of electrocution or fire   | Reduce overloading by restricting use of unauthorized and inappropriate appliances |
| <b>CAVS</b>                   | Labs and lecture theatres | A number of the electrical equipments including fridges, deep freezer, water bath incubators, scales, ovens shakers, etc are either out dated or needs disposal urgently to create space | Urgent action on calibration and procurement of maintenance spare parts.           |
| <b>CEES</b>                   |                           | Reasonable   | Needs regular and proper maintenance.  |
| <b>Dental School</b>          |                           | Reasonable   | Disposal of obsolete equipment and   |

|                             |                   |  |  |
|-----------------------------|-------------------|--|--|
|                             |                   |  | the need for service contracts of the new machines.  |
| <b>Medical School</b>       | Halls and Kitchen | Poor connections and inappropriate wire rating.  | Both kitchens and halls need electrical overhaul and rectification of mains distribution board.      |
|                             | Labs              | A number of equipments are out dated and not-serviceable   | Dispose and replace  |
| <b>ADD Building</b>         |                   | <p>Poor condition</p> <ul style="list-style-type: none"> <li>• The control room faces tapings of the supply from the incoming mains with armored tray cable missing.</li> <li>• Water Leakages go through electrical cables.</li> <li>• The two top new floors are not properly electrically installed.</li> </ul> | Need for complete overhaul of the electrical system in the building.                                 |
| <b>Kenya Science campus</b> | Halls and Kitchen | Mains switch gears are aged<br>There are sections without adequate power supplies and lighting.  | Needs overhaul   |
|                             | Staff Quarters    | Poor state; Security lights poles, farm project, swimming pool neglected.  | Inspection and regular maintenance   |
| <b>Kisumu Campus</b>        |                   | Old generator in the British Council Building and expensive to maintain.<br>Non-functional air conditioners.   | Inspection of the Buildings, replacement of old generator and air-conditioners with service contract |
| <b>Lower Kabete</b>         | Halls and Kitchen | Standby generator is old and difficult to maintain   | Inspection and subsequent rewiring   |
| <b>Mamlaka Staff Houses</b> |                   | The incoming supply to the meter box (mains switch) has one meter for the whole premises,  | Urgent need for meter separation for each unit<br>Servant quarters should be checked for re-         |

|                               |  |  |   |
|-------------------------------|--|--|---|
|                               |  |  | wiring<br>More security lighting system needed  |
| <b>Moana research Station</b> |  | Some sections are not lit e.g. toilets, quarters. The care taker house is badly wired with hanging cable posing danger. Generator is not adequate to serve the station. Maintenance staff not enough.  | Inspect and restore the wiring as required and then rewire the areas where there is no power. |
| <b>Mombasa Uniplaza</b>       |  | Power incoming room where the switch gears are and meter are too old.  | Need to update wiring   |
| <b>Parklands Campus</b>       | Administration Block, Lecture Rooms and Library. | Unauthorized tappings from the supply. Stand by generator is small to supply enough power.   | Need to upgrade the standby generator and upgrade the power supply                            |
|                               | SMU, Staff Quarters and Kitchen                  | Unauthorized tappings of supply is causing a lot of overloads e.g. power to clinic is tapped from swimming pod which is already overloaded and pumps are not working at all lighting e.g. toilets, bathrooms, power points have been vandalized. The students connect their entire gadget in the system overloading it more and more and expecting anything to happen serious e.g. fire, electrocution or burns. | Reduce overloading by restricting use of unauthorized and inappropriate appliances            |

### 3.4. ICT Equipment

#### 3.4.1. Types of ICT Equipment

Table 3 below shows the various types of ICT equipment from 58 ICT sites audited in all campuses.

**Table 3. Types of ICT equipment**

| Type of Equipment | Quantity   |
|-------------------|--|
| <b>Computers</b>  | • 22 sites have the highest number of computers between 11 |

|                          |  |
|--------------------------|--|
|                          | <ul style="list-style-type: none"> <li>and 30</li> <li>• 15 sites have computers between 31 and 100.</li> <li>• 10 sites have computers between 6 and 10</li> <li>• 9 sites have computers between 1 and 5 with only one sited having above 100 computers</li> </ul> |
| <b>Laptops</b>           | <ul style="list-style-type: none"> <li>• 4 sites had the highest number of laptops between 1 and 5</li> <li>• One site had laptops between 6 and 10 and another site had between 11 and 30</li> </ul>  |
| <b>Computer Printers</b> | <ul style="list-style-type: none"> <li>• 31 sites have the highest number of printers between 1 and 5</li> <li>• 9 sites have printers between 6 and 10</li> <li>• 6 sites have printers between 11 and 30</li> </ul>  |
| <b>LCDs</b>              | <ul style="list-style-type: none"> <li>• 22 sites have the highest number of LCDs between 1 and 5</li> <li>• 2 sites have LCDs between 11 and 30</li> <li>• One site has LCDs between 6 and 10</li> </ul>  |
| <b>UPSs</b>              | <ul style="list-style-type: none"> <li>• 16 sites had the highest number of UPSs between 11 and 30</li> <li>• 7 sites had UPSs between 31 and 100</li> <li>• 8 sites had UPSs between 1 and 5</li> <li>• 5 sites had UPSs between 6 and 10</li> </ul>                |
| <b>Operating System</b>  | <ul style="list-style-type: none"> <li>• 36 sites have XP as their operating system</li> <li>• The rest of the sites had a combination of XP, VISTA and Window7, Windows 2000, XP, and Linux with only one site having Macintosh.</li> </ul>                         |
| <b>Missing</b>           | <ul style="list-style-type: none"> <li>• Quite a number of sites did not have the following equipments, Heavy duty UPSs, Networking Switches, Scanners, Photocopiers, Printing Machines, Servers, Digital cameras and CCTV cameras.</li> </ul>                       |

### 3.4.2. ICT Condition Assessment

The condition assessment of the ICT equipment found in the 58 sites is described in Table 3.17 in Annexe 3. Table 4 below, however, provides a summary of the same. Overall, assessment of ICT equipments was generally good at 68.99%. Areas highlighted by users that need immediate attention include:

- i. Only 36.2 % of the sites have quarterly preventive maintenance done and these sites have less frequent failures.
- ii. Only 69% of ICT equipment are on service contracts. There is a strong case therefore to place major ICT equipment on service contracts.
- iii. Only **60.3** % of the staff have adequate training. There is strong need to train other members of staff on software development such as on-line registration of students, HRMIS etc.

- iv. The current anti-virus system does not seem effective particularly with respect to on-line virus attacks.
- v. Internet accessibility in some sites such as Lower Kabete Campus is often down. This needs immediate attention for the benefit of teaching and research.
- vi. It was observed that there are many unserviceable/obsolete ICT equipments in many stations that need policy for replacement and disposal.

**Table 4. Overall ICT Condition Assessment and Remedial Action.**

| <b>Condition</b> | <b>% Result</b> | <b>Remedial Action</b> | <b>% Need</b> |
|------------------|-----------------|------------------------|---------------|
| Best             | 10.3            | As New                 | 29.3          |
| Good             | 58.6            | Needs Minor repairs    | 44.8          |
| Reasonable       | 17.2            | Needs major repairs    | 17.2          |
| Holding          | 13.9            | Scrap/Replace          | 8.7           |
| Total            | 100.0           |                        | <b>100.0</b>  |

**3.5. Transport and Garage Management.**

Transport is not equitably distributed among colleges. Some colleges have more buses against a smaller population while some with higher populations have none. Learning programmes are often interfered with because of lack of transport which is rarely availed when needed in time. Thus students have been made to believe that to get transport for their activities, students allegedly use force. Programmes that are field-based are frustrated by lack of transport.

Similarly, maintenance staff members have reported lack of transport as an impediment to their operation. The same truck used to ferry material is the one used to ferry them to site. This is illegal and they have on occasions been caught on the wrong side of the law. Besides, the materials are taken first before staff and by the time the truck gets all on site, a lot of time is wasted. During rains, the open truck cannot be used. In such cases, where casuals are used, payment would still be made despite little real labour input into the work. This is wasteful of resources.

In other instances, the Transport Section allocates a vehicle belonging to a unit to a different unit for a journey, and at the end of the trip it is the unit to which the vehicle belongs to that meets the servicing costs (i.e. maintenance of the vehicle remains with the allotted despite the fact that it is used by a different user).

The current centralization of maintenance of vehicles is not only tedious, it is quite expensive. For example a small spare part that could be purchased cheaply is bought at a higher price (about three times more) and the process takes too long. Servicing or getting spares for vehicles takes too long. The centralized issuance of fuel card top up is cumbersome.

Currently there exists no defined motor vehicle replacement policy. Motor vehicles are mainly replaced when they get grounded as a result of lack of funds required for their maintenance and/or accident damage. Hence there are motor vehicles that are over 20 years still operating so long as the user departments have the funds to support their repairs. In this regard, no clear basis for specifying the maintenance cost or age at which to replace a motor vehicle has been quantified.

### **3.6. Environmental Management**

Maintenance operations of University estate and other properties have an important bearing on environmental quality. The University maintenance operations should aim at not only reduction of environmental pollution, but also enhanced savings due to reduced waste production. It is therefore prudent to mainstream environmental considerations in University Maintenance Policy.

The following are the results of the analysis of checklists that were developed and administered at forty eight sites across the university.

#### **i. List of authorities involved in regulating environmental activities at the University**

Knowledge of and, maintaining a list of Government bodies responsible for enforcement of environmental laws that have a bearing on University activities is

essential. Only 18% (9) of the audited facilities had this knowledge and had a list of the government departments involved.

**ii. Copies of relevant laws, regulations, permits and standards**

There are a number of environmental laws, regulations and standards that regulate all activities, including maintenance activities at the University of Nairobi. There are also permits e.g. for waste transportation or for effluent discharge into the environment. About 63% (31) did not have copies of the relevant laws, regulations, permits or standards.

**iii. Environmental policy statement**

One of the objectives of the environmental policy and management checklist was to find out if different University management units have their own policy for guiding environmental objectives. About 33% (16) of the audited facilities claimed that they had an environmental policy statement.

**iv. Procedures and schedules for review of site/departmental environmental policy**

Although 33% of the audited sites reported that they had an environmental policy, only 18% (9) sites had established procedures and schedules for review of their environmental policy.

**v. Records of environmental performance review meetings**

Very few (14%) of the audited sites kept records of their environmental performance review meetings. This suggests that little or no assessment of environmental performance regarding maintenance activities is meaningfully carried out in the University.



**vi. Procedures to identify environmental aspects<sup>1</sup> of maintenance at the University of Nairobi and determination of actual or potential significant environmental impacts of maintenance activities**

The majority of the audited sites (82%) had not established procedures for identifying environmental aspects of maintenance activities at the University as well as determination of potential and actual impacts.

**vii. Environmental objectives<sup>2</sup> and targets<sup>3</sup> have been established and documented**

Determination of what needs to be done to minimize impacts from maintenance/construction activities as well as specific impact reduction targets is important for the University. However, the results showed about 90% (44) of the audited facilities had not established their environmental objectives and targets in spite of the fact that 33% of the facilities had reported having an environmental policy.

**viii. Environmental management programme for achieving objectives targets**

Of the sites that responded to the question whether they have established an environmental management programme for achieving the set objectives and targets, about 80% (39) responded that they did not have an environmental management programme.

**ix. Permit to work system developed**

Permit to work within University sites based on appropriate risk assessment is important for safety of both University and non-University employees; 69% (34) of the audited sites did not have a permit to work system. It may be noted that not all facilities may require the development of a permit to work system.

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<sup>1</sup> Refers to elements of maintenance/construction activities which may have potentially beneficial or harmful effects on the environment e.g. discharges and emissions, raw materials & energy use, waste generation, noise, dust and visual pollution

<sup>2</sup> What needs to be done to minimize impacts from maintenance/construction activities

<sup>3</sup> Specific impact reduction targets

**x. Green procurement policy for the Department**

The overall procurement policy is presently guided by the procurement and disposal of assets act which calls for environmental considerations during procurement and disposal of assets. About 31% (15) of the audited facilities claimed that they had a green procurement policy at the site/departmental level. Disposal of obsolete/unserviceable assets at the University of Nairobi seems to be a major problem with serious space and environmental consequences.

**xi. Guidelines on green products and services for suppliers**

Maintenance/construction projects at the University often require the procurement of goods and services. Green products and services are resource saving, less polluting and less wasteful. As stated in the draft University of Nairobi Environmental Policy, the University should develop these guidelines and inform all suppliers of goods and services.

About 67% (33) of the audited facilities had not established guidelines for green products and services for suppliers.

**xii. Waste management**

A higher number of the audited sites (55%) had established procedures for waste categorization and handling. However, very few (about 6%) sites were using Cleaner Production methods such as the 3R $\text{\pounds}$  (Reduce, Re-use & Recycle).

**xiii. Staff training in environmental matters**

Only 22% (11) of the audited sites reported staff training on environmental matters. If the University has to meet its environmental objectives and targets overall, and in maintenance/construction activities, the aspect of training will need urgent attention.

From the findings of the audit, it is clear that environmental consideration in maintenance/construction activities at the University of Nairobi is appreciably less than it should be given the University's goal of becoming a world-class University. It will be prudent therefore to mainstream environmental considerations as a key pillar in the Maintenance Policy.

### **3.7. Procurement Management**

The University follows the Public Procurement and Disposal Act, 2005 and the University of Nairobi Financial Regulations to ensure that all goods and services required in the University conform to government regulations. This procedure assumes well planned set of activities including planned preventive maintenance for all the physical assets.

It was observed that the current procurement procedures:

- i. Use of open tender, restricted tender, quotation and direct procurement may not be suitable for certain maintenance activities that are sudden or that are available only from one supplier. (e.g. Failure of refrigeration in the mortuary, failure of critical ICT equipment such as back-up generator, UPS, Air Conditioners, network switches among others), due to the perceived lengthy and cumbersome procedures.
- ii. Make the cost of materials more expensive than direct purchases particularly for the low cost items.
- iii. Seem to emphasize functionality of goods and services at the expense of quality.
- iv. Assume universal knowledge of products specifications and quality control which is often lacking due to availability of requisite personnel.

It was also observed that:

- i. Most user units are reactive rather than proactive with respect to the procurement process.
- ii. Although some procurement procedures in the university have been decentralized, problems still persist especially with regard to outstations which must still seek approval from the respective colleges or Central Administration such as Regional Campus sites and research stations.
- iii. The University is facing a serious problem of disposal with respect to obsolete and unserviceable plant and equipment as well as past examination scripts that continue to occupy space as well as posing environmental hazards.

- iv. There is no guiding principle on disposal of hazardous chemicals and radioactive waste; nor is there any policy to guide when a tree is to be cut.

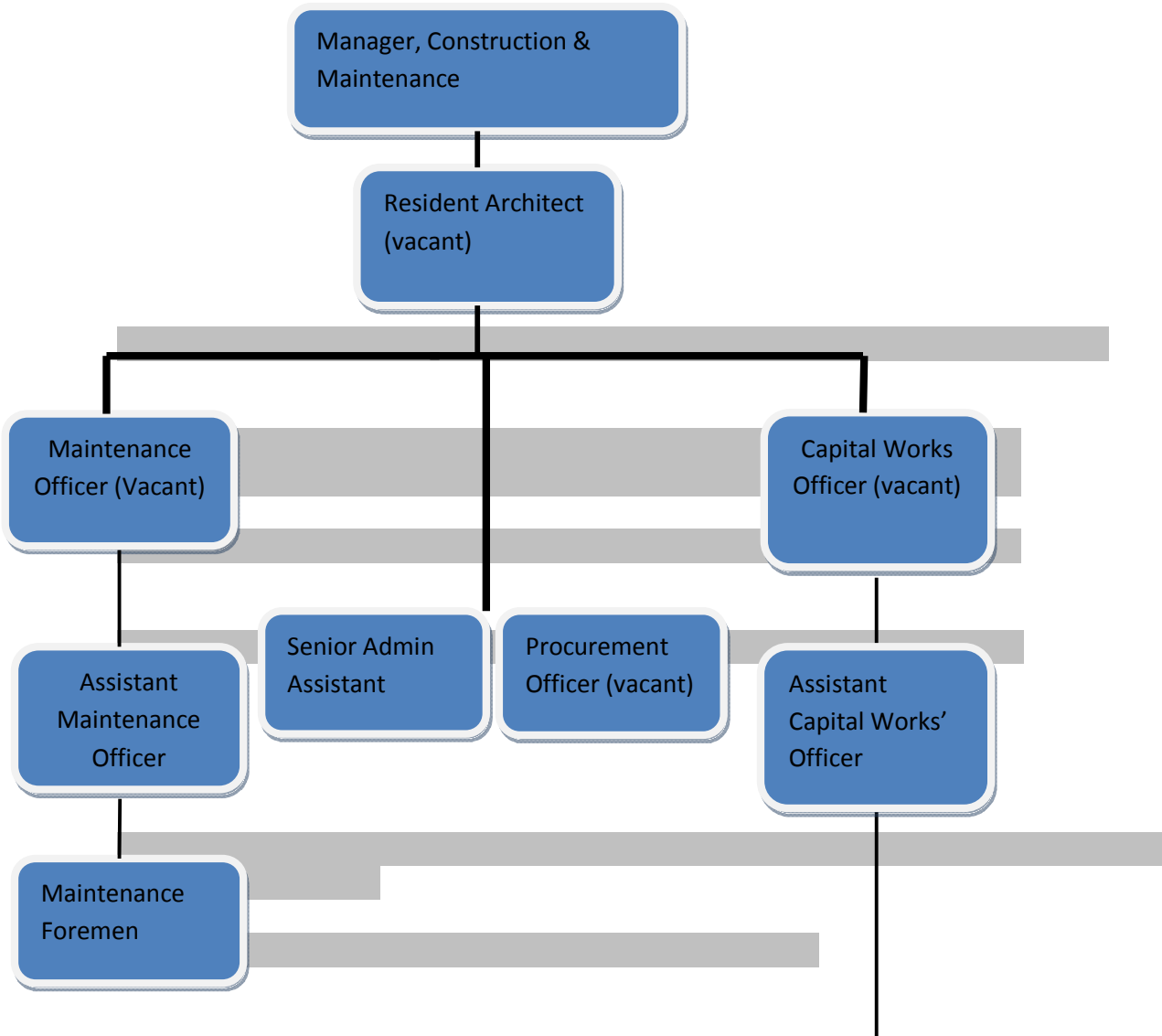
### **3.8. Current Maintenance Management Practices**

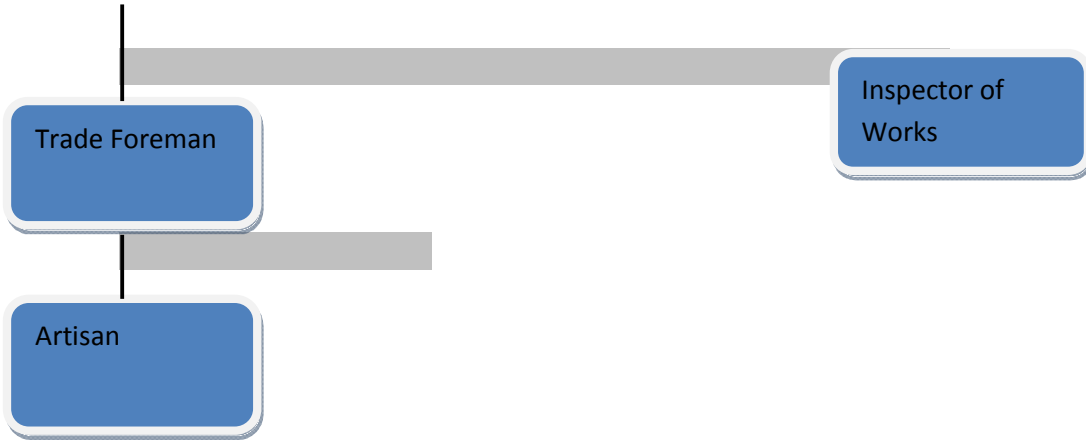
Construction & Maintenance Department was previously known as Clerk of Works Division undertaking only development works. Physical facilities were under Estates Department. Following the proposal for restructuring and subsequent approval by the University Management Board (UMB), Construction & Maintenance Department surfaced charged with the responsibility of maintaining existing physical facilities and developing new ones.

#### **3.8.1. Structure**

Construction & Maintenance Department is charged with the responsibility of developing and expanding physical facilities for the University, and maintaining the facilities through routine maintenance work. This is geared towards enabling the University execute its mandate. In order to achieve this, the Department is structured in two main sections, namely, Capital Works Section and Maintenance Section as shown in the chart below (Figure 3.1).

**Figure 3.1. Organizational Chart for Construction & Maintenance Department**

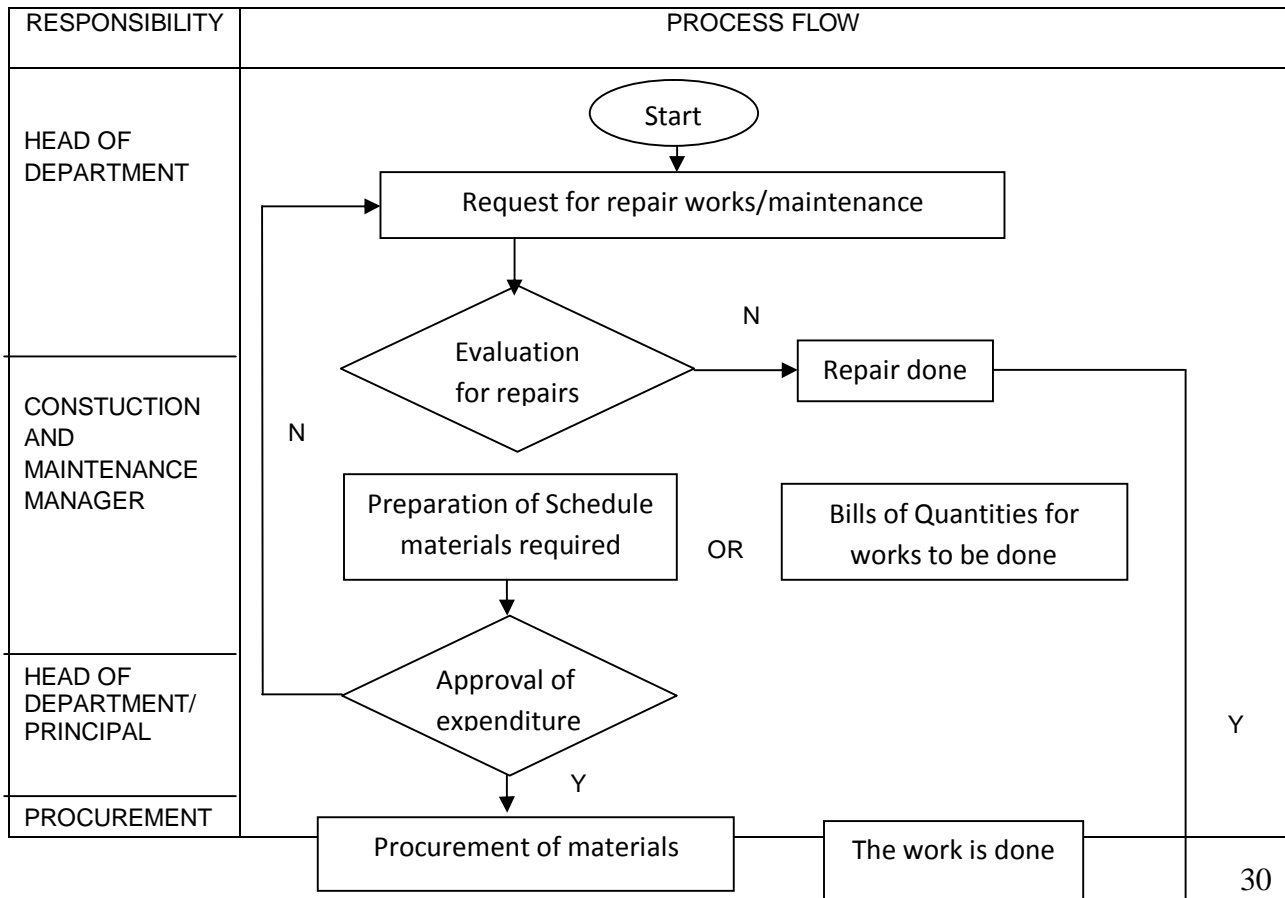


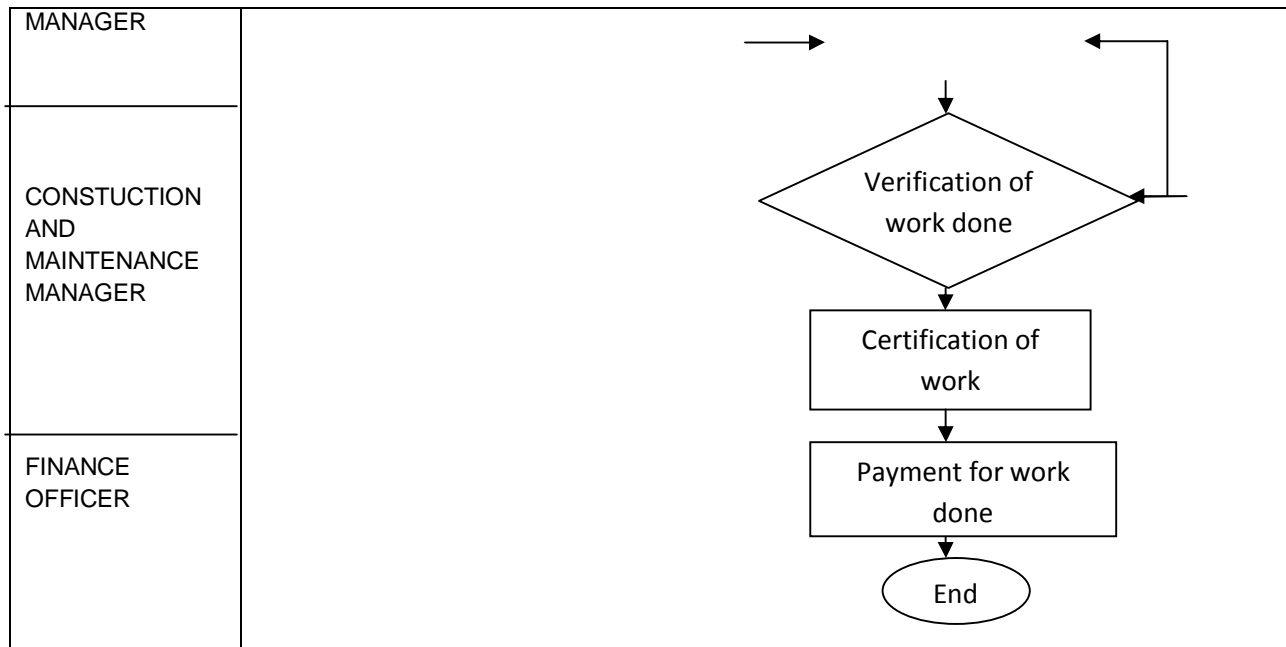


**3.8.2. Maintenance Section**

The process of maintaining the physical facilities is undertaken by the Maintenance Section using the following processes (Figure 3.2):

**Figure 3.2 The Process Map for Maintenance & Repairs of Physical Facilities**





- a. Through formal request by the user department/institute/school/college by filling a Maintenance Instruction (commonly referred to as M1).
- b. Through recognition by the section for a need for repairs; or
- c. An emergency to which the section is alerted to or notices in course of duty such as pipe breakages or power outage. In this case, artisans would fix the problem immediately except where new materials would be required.
- d. In other cases, as a performance contract requirement.

In the first two cases, the process would normally follow the following sequence:

- i. **Take Specifications:** On receiving a request for repairs or on recognizing that there is need for repairs or maintenance works, the technical staff are send to site and would take specifications of the required material to carry out the works.
- ii. **Seek Procurement:** Identified materials are submitted to Procurement Section which subjects them to its process in order to have them supplied to the Department. Once the materials are received by the Department, maintenance section moves to the next stage.
- iii. **Repair Process:** The process of repair starts as soon as the materials are received. Trained personnel in the respective area are sent on site and do all

- the repairs to completion. They normally clear the area of any debris and make good any damage occasioned during the process after completing the work.
- iv. **Handing Over:** Having completed the work, the user certifies that he/she is satisfied (if not, further work to the satisfaction of the user continues) and the project is handed to them.

It was observed that;

- i. A number of senior positions such as Resident Architect, Senior Maintenance Officer and Maintenance Officer are currently vacant which may hamper effective performance of the maintenance operations.
- ii. A number of staff are de-motivated as a result of stagnating in the same grades without promotion for a number of years which may negatively be impacting on their performance while at the same time the existing structure does not attract better qualified people from the industry.
- iii. The development/capital vote is always underprovided for vis-a-vis the requirements of the whole University. Delays in paying contractors are frequently experienced, which sometimes lead to litigation. Inadequate funding is more costly to the University than may be perceived due to unaccountable costs in delayed commencement of programmes and projects.
- iv. There are delays in procuring materials caused by long and cumbersome procurement processes.
- v. The department lacks computerized maintenance management information system to facilitate timely management of maintenance activities.
- vi. The department lacks adequate working tools for artisans, transport to ferry staff to workstations as well as lack of working space for staff and tools.

### **3.9. SWA Maintenance**

SWA Department is charged with the responsibility of maintenance of all the Catering and Accommodation facilities within the entire Students Welfare Authority. In terms of maintenance, the section is currently headed by Assistant Maintenance Officer who is



administratively under the Director, SWA and technically under the **Manager, Construction and Maintenance** through the Maintenance officer UoN.

It was observed that;

- i. Maintenance services at SWA are required by very unique customers (students) and a lot of care is necessary on account of possible misuse and abuse of the facilities.
- ii. That current SWA maintenance procedure are similar to those undertaken by the Maintenance Section and face similar problems of staffing, inadequate working tools, low budget allocation and bureaucratic procurement procedures.
- iii. That cooking by students in their rooms is a major cause of electrical overloading and other maintenance problems.

### **3.10 Security**

Most of the facilities such as halls of residence, lecture halls, computer laboratories and offices have no adequate surveillance system to monitor movement in and out of the buildings, which compromises security. Vandalism and theft cause maintenance problems. Owing to security issues, there has been a trade-off in image and risk to human life because of excessive burglar proofing and blocking of fire escape routes.

## **4. CONCLUSIONS AND RECOMMENDATIONS**

### **4.1 Conclusions**

The following challenges were brought out during the process of discussions with various stakeholders as well as observations drawn from the audit of the physical assets of the University of Nairobi.

#### **4.1.1. Standard of Maintenance Services**

- i. Maintenance services are not consistent across colleges.
- ii. There are also frequent power outages especially at ADD, CHS and SWA halls of residence and offices perhaps due to overloading of the transformer and installation equipment.
- iii. In a few cases some buildings and structures are both a health hazard and a security risk.

#### **4.1.2. Teaching and Office Space**

- i. The office and learning spaces are inadequate in most colleges and administrative departments.
- ii. Furniture is also inadequate in both quality and quantity in most colleges and administrative departments.

#### **4.1.3. SWA Facilities**

- i. There is a mismatch between the number of students admitted and facilities available with resultant severe congestion and increase in wear and tear leading to increased maintenance cost.
- ii. There is wide spread breach of University regulations governing students accommodation at the University.
- iii. The amount of money charged for studentsq accommodation is insufficient to meet requirements.
- iv. There is a significant backlog of maintenance in majority of the halls.
- v. There is widespread vandalism which negatively impacts on the effectiveness of maintenance.

#### **4.1.4. Maintenance of Residential Houses**

- i. Most of residential houses are in poor state of maintenance due to lack of maintenance policy.
- ii. Participatory maintenance is weak.
- iii. The capacity of the Department of Construction & Maintenance is low given the dispersed nature of University houses.
- iv. Customer satisfaction survey is lacking.

#### **4.1.5. Plant and Equipment**

- i. A number of equipment in the University suffer from functional obsolescence on account of age, lack of spares and technological advancement.
- ii. There is a shortage of skilled personnel to match changing needs for modern equipment maintenance.
- iii. Inspection and servicing of fire equipment in some cases is inadequate.
- iv. Not all equipments in the University are covered by service contracts.

#### **4.1.6. Procurement**

- i. The implementation of procurement plans for goods and services to enhance maintenance is weak resulting in underperformance.

- ii. The requirement by procurement procedures based on functionality and cost rather than brands compromises quality, especially for specialized equipment.

#### **4.1.7 Transport**

- i. Currently there exists no transport management system with the result that the status of the vehicle at any given time is not captured to facilitate planned preventive maintenance of the motor vehicle.
- ii. Currently the University does not have motor vehicle replacement and disposal policy with the result that there are vehicles over 20 years still operating at great expenses to the University, while another 67 vehicles(32.3%) out of 207 vehicles are poor or unserviceable and occupy space in the parking yards and pose environmental hazards.

#### **4.1.8. Security**

The security system in the University is reportedly weak leading to vandalism and theft especially in the halls of residence and ADD building.

#### **4.1.9 Environment, Health and Safety**

From the findings, environmental consideration in maintenance/construction activities at the University of Nairobi is appreciably less than it should be given the University's goal of becoming a world-class University.

#### **4.1.10 Maintenance Management Structure**

- i. The Department of Construction & Maintenance is understaffed by 43% leading to underperformance.
- ii. A number of members of staff are de-motivated as a result of stagnating in the same grades for a number of years.
- iii. There is inadequate provision of resources including tools, uniform, personal protective equipment, working space and transport.

- iv. Responsibility relationships between the Construction & Maintenance Department and the college campuses are not clearly defined with respect to maintenance.
- v. Responsibility of different operational units using shared facilities is not clearly defined.

#### **4.1.11. Information Communication Technology (ICT)**

- i. There are frequent internet interruptions across the University with negative effects on efficiency.
- ii. The current University anti-virus is not effective particularly with respect to online operations.
- iii. The level of training in the use of ICT equipments and related infrastructure is low resulting in underutilization of ICT capacity.

## **4.2 Recommendations**

### **4.2.1. Standard of Maintenance Services**

- i. The University should undertake annual inspection to identify dilapidated and unusable buildings and structures to facilitate their condemnation by the Ministry of Public Works Board of Survey.
- ii. The University should ensure uniform and consistent planned preventive maintenance with associated funding for all the physical assets so as not to jeopardize realization of the University's mandate and image across all the colleges.
- iii. The University should inspect and upgrade power supply systems including provision of standby generators in all colleges particularly where there are sensitive functions and uses in accordance with paragraph 4.2.1 (i)

### **4.2.2. Teaching and Office Space**

- i. The University should as soon as practicable undertake a gap analysis of space to determine space requirements so as to match the increasing students and staff population.

- ii. The University should carry out a survey to determine the effectiveness of leasing space vis-a-vis space acquisition through development as appropriate. Leased property should, however, meet University standards and be in conducive environments.
- iii. The University should continuously improve the quality of teaching and office space so as to benchmark and uphold the image of a centre of academic excellence.

#### **4.2.3. SWA Facilities**

- i. The University should delink student admission from accommodation to minimize congestion as well as wear and tear.
- ii. Enhance enforcement and compliance with University regulations governing student accommodation.
- iii. Security should be enhanced in SWA facilities including installation of CCTV surveillance cameras and human intelligence.

#### **4.2.4. Maintenance of Residential Houses**

- i. The University should maintain the leased houses to acceptable maintenance standards.
- ii. The University should carry out annual customer satisfaction surveys.
- iii. The University should draw out lease agreements with tenants spelling out the obligations of both parties.
- iv. The University should integrate the Maintenance Instruction Forms (MIF) into the maintenance management information system.
- v. Alternatively the University could consider outsourcing the management of University staff houses as appropriate.

#### **4.2.5. Plant and Equipment**

- i. The University should develop preventive maintenance system for plant and Equipment in accordance with ISO requirements
- ii. The University should develop an Equipment Replacement Policy

- iii. The University should strengthen the mechanical production unit to facilitate fabrication and retrofitting of spare parts.
- iv. Acquisition of new specialized equipment should come with service contract and/or training of maintenance personnel to service the acquired equipments.
- v. The University should undertake regular inspection and servicing of fire equipment in compliance with national statutory requirements.
- vi. The University should continuously update the asset register

#### **4.2.6. Procurement**

- i. The University should customize the Public Procurement and Disposal Act (2006) to increase efficiency in its operations.
- ii. Decentralize procurement to Departmental level, and set a ceiling for items that should go through the procurement process so as to fast track maintenance bottlenecks.
- iii. Procedures should be developed to identify high priority areas and facilitate their needs in line with the required operations and processes in the identified areas.
- iv. The University should increase its efficiency in the disposal of obsolete equipment and machines

#### **4.2.7. Transport**

A computer based transport information system should be developed to facilitate the following;

- i. To optimize the number of vehicles in operation so as to reduce annual maintenance and environmental costs
- ii. To facilitate improvement of University transport logistics and efficiency.
- iii. To facilitate tracking of preventive maintenance schedules and replacement of obsolete and unserviceable items.
- iv. Alternatively, the University could consider outsourcing transport services so as to reduce maintenance cost and efficiency of operations as appropriate.

#### **4.2.8. Security**

- i. The University should improve control points to regulate and monitor movement in and out of strategic building facilities.
- ii. A suitable electronic system that permits authorized persons to and from various buildings is recommended for the University.
- iii. The use of CCTV monitors is highly recommended in line with 4.2.8(ii). This could start in phases.

#### **4.2.9 Environment, Health and Safety**

- i. The University should mainstream environmental considerations as a key pillar of the Maintenance Policy.
- ii. The University should develop an asbestos management policy.
- iii. The University should develop procedures and systems for disposal of hazardous wastes including e-wastes.
- iv. The University should conduct annual tree hazard assessment.
- v. The University should develop %permit to work+guidelines for various locations as appropriate.

#### **4.2.10 Maintenance Management**

- i. Both maintenance and capital projects should planned and funded adequately.
- ii. The Department of Construction & Maintenance should be allowed and facilitated to procure fast moving items in bulk.
- iii. The University should increase staffing and facilitate promotion/upgrading of staff in the Department to improve on the staff morale and performance.
- iv. It is recommended that the Department be provided with adequate transport to facilitate supervision and execution of maintenance works.
- v. Appropriate personal protective equipment and tools should be provided annually to the work force as appropriate.



#### 4.2.11. Information Communication Technology (ICT)

- i. The University should carry out preventive maintenance to all ICT equipment at least twice a year to prevent frequent failures.
- ii. All critical ICT equipment should have service contracts
- iii. The University should ensure that up to date and effective anti-virus systems are installed at all sites.
- iv. The University should develop a clear reporting structure for staff deployed in various colleges

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## 6. ANNEXES

### ANNEXE 1: CONDITION RATING FOR BUILDINGS AND GROUNDS

Table 3.1. Main Campus Buildings

| Name of Building               | Location of Building | Element of Building  | Condition Assessment | Overall Building Rating                                 |
|--------------------------------|----------------------|----------------------|----------------------|---|
| <b>Civil Engineering Block</b> | Main Campus          | Roof                 | Minor repairs        | Minor repairs   |
|                                |                      | Ceiling              | Good                 |   |
|                                |                      | Walls                | Good                 |   |
|                                |                      | Floors               | Reasonable           |   |
|                                |                      | Doors & Windows      | Reasonable           |   |
| <b>Hyslop Building</b>         | Main Campus          | Roof                 | Poor                 | Serious repairs to the roof and Minor repairs elsewhere |
|                                |                      | Ceiling              | Reasonable           |   |
|                                |                      | Walls                | Good                 |   |
|                                |                      | Floors               | Good                 |   |
|                                |                      | Doors & Windows      | Reasonable           |   |
| <b>8.4.4. Building</b>         | Main Campus          | Roof                 | Reasonable           | Minor repairs   |
|                                |                      | Ceiling              | Reasonable           |   |
|                                |                      | Walls                | Good                 |   |
|                                |                      | Floors               | Reasonable           |   |
|                                |                      | Doors & Windows      | Good                 |   |
| <b>Education Building</b>      | Main Campus          | i)Poor condition and | Critical repairs     |   |

|                                |              |   |                     |   |
|--------------------------------|--------------|---|---------------------|---|
|                                |              | possible health hazard<br>ii)The basement of the building is logged in water whose source is not known.<br>iii)The lift is non-functional | Replacement of lift |   |
| <b>ADD Block</b>               | Mamlaka Road | Roof  | Reasonable          | Asbestos to be replaced with environmental friendly material              |
|                                |              | Asbestos  | Health hazard       |   |
|                                |              | Walls   | Good                |   |
|                                |              | Floors  | Good                |   |
|                                |              | Doors & Windows   | Reasonable          |   |
| <b>HABRI Low Cost Building</b> | ADD          | Roof  | Holding             | Critical repairs or replacement   |
|                                |              | Ceiling   | Holding             |   |
|                                |              | Walls   | Minimum             |   |
|                                |              | Floors  | Minimum             |   |
|                                |              | Doors & Windows   | Reasonable          |   |
| <b>C.C.U.</b>                  | State House  | Roof  | Reasonable          | Critical repairs to the drainage system and Minor repairs to the building |
|                                |              | Ceiling   | Reasonable          |   |
|                                |              | Walls   | Reasonable          |   |
|                                |              | Floors  | Good                |   |
|                                |              | Doors & Windows   | Good                |   |
| <b>Administration Block</b>    | Main Campus  | Roof  | Best                | Minor repairs   |
|                                |              | Ceiling   | Best                |   |
|                                |              | Walls   | Reasonable          |   |
|                                |              | Floors  | Good                |   |
|                                |              | Doors & Windows   | Good                |   |
|                                |              | Doors & Windows   | Good                |   |
| <b>Mamlaka</b>                 |              | Ceiling   | Reasonable          |   |

|  |  |                 |            |  |
|--|--|-----------------|------------|--|
| <b>Prefab.B</b>                            |  | Walls           | Good       | Fire hazard risk and expensive to maintain. Should be replaced with high-rise blocks |
|  |  | Floors          | Good       |  |
|  |  | Doors & Windows | Reasonable |  |
|  |  | Doors & Windows | Reasonable |  |
| <b>Mechanical Eng. Building/ Workshops</b> |  | Ceiling         | Reasonable | Serious repairs to the roof requiring low-pitched IT4 sheets                         |
|  |  | Walls           | Reasonable |  |
|  |  | Floors          | Reasonable |  |
|  |  | Doors & Windows | Good       |  |
|  |  | Doors & Windows | Good       |  |
| <b>Halls of Residence</b>                  |  | Ceiling         | Reasonable | Minor repairs  |
|  |  | Walls           | Reasonable |  |
|  |  | Floors          | Reasonable |  |
|  |  | Doors & Windows | Reasonable |  |

**Table 3.2. School of Law: Parklands**

| <b>Name of Building</b> | <b>Location of Building</b> | <b>Element of Building</b> | <b>Condition Assessment</b> | <b>Overall Building Rating</b>   |
|-------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------------|
| <b>School of Law</b>    | Parklands                   | Roof                       | Reasonable                  | Minor repairs to lecture theatre |
| Offices,                |                             | Ceiling                    | Reasonable                  |                                  |
| Lecture rooms,          |                             | Walls                      | Reasonable                  |                                  |
| hostels, dining         |                             | Floors                     | Reasonable                  |                                  |
| and                     |                             | Doors & Windows            | Reasonable                  |                                  |

**Table 3.3. College of Health Sciences: Kenyatta Hospital**

| <b>Name of Building</b> | <b>Location of Building</b> | <b>Element of Building</b> | <b>Condition Assessment</b> | <b>Overall Building Rating</b> |
|-------------------------|-----------------------------|----------------------------|-----------------------------|--------------------------------|
| <b>Dental Plaza</b>     | <b>School of Pharmacy</b>   | Roof                       | Reasonable                  | Minor repairs                  |
|                         |                             | Ceiling                    | Reasonable                  | Minor repairs                  |
|                         |                             | Walls                      | Good                        |                                |
|                         |                             | Floors                     | Reasonable                  |                                |
|                         |                             | Doors & Windows            | Reasonable                  |                                |
| <b>Clinical</b>         | <b>School of</b>            | Roof                       | Reasonable                  |                                |

|   |                           |                 |  |                     |
|---|---------------------------|-----------------|--|---------------------|
| <b>Pharmacology</b>                             | <b>Pharmacy</b>           | Ceiling         | Reasonable   | Minor repairs       |
|   |                           | Walls           | Good   |                     |
|   |                           | Floors          | Good   |                     |
|   |                           | Doors & Windows | Reasonable   |                     |
| <b>Single storey blocks</b>                     | <b>School of Pharmacy</b> | Roof            | Poor State with walls cracking, leaking roofs and poor sanitary facilities | Condemn/Replacement |
|   |                           | Ceiling         |  |                     |
|   |                           | Walls           |  |                     |
|   |                           | Floors          |  |                     |
| <b>Diagnostic Imaging &amp; Radiation Dept.</b> |                           | Doors & Windows | Reasonable   | Minor repairs       |
|   |                           | Floors          | Good   |                     |
|   |                           | Walls           | Reasonable   |                     |
|   |                           | Ceiling         | Good   |                     |
|   |                           | Roof            | Good   |                     |
| <b>Kenya AIDS Vaccine Initiative</b>            |                           | Doors & Windows | Good   | Minor repairs       |
|   |                           | Floors          | Good   |                     |
|   |                           | Walls           | Reasonable   |                     |
|   |                           | Ceiling         | Good   |                     |
|   |                           | Roof            | Good   |                     |
| <b>Admin Block</b>                              | CHS                       | Doors & Windows | Good   | Minor repairs       |
|   |                           | Floors          | Good   |                     |
|   |                           | Walls           | Good   |                     |
|   |                           | Ceiling         | Good   |                     |
|   |                           | Roof            | Reasonable   |                     |
| <b>KAVI</b>                                     |                           | Doors & Windows | Reasonable   | Minor repairs       |
|   |                           | Floors          | Reasonable   |                     |
|   |                           | Walls           | Reasonable   |                     |
|   |                           | Ceiling         | Good   |                     |
|   |                           | Roof            | Good   |                     |
| <b>Clinical Pharmacology</b>                    |                           | Walls           | Reasonable   | Minor repairs       |
|   |                           | Ceiling         | Reasonable   |                     |
|   |                           | Roof            | Reasonable   |                     |

|  |   |                 |            |               |
|--|---|-----------------|------------|---------------|
|  |   | Floors          | Good       |               |
|  |   | Doors & Windows | Good       |               |
| <b>Dental School</b>                   |   | Roof            | Reasonable | Minor repairs |
|  |   | Ceiling         | Reasonable |               |
|  |   | Walls           | Reasonable |               |
|  |   | Floors          | Reasonable |               |
|  |   | Doors & Windows | Reasonable |               |
| <b>Obstetrics and Gynecology Dept.</b> | - | Roof            | Reasonable | Minor repairs |
|  |   | Ceiling         | Reasonable |               |
|  |   | Walls           | Reasonable |               |
|  |   | Floors          | -          |               |
|  |   | Doors & Windows | Reasonable |               |

**Table 3.4. Lower Kabete Campus Buildings**

|  |              |  |            |                         |
|--|--------------|--|------------|-------------------------|
| <b>Admin Block, Old Lib &amp; SMU</b>            | Lower Kabete | Roof   | Minimum    | Minor repairs           |
|  |              | Ceiling  | Minimum    |                         |
|  |              | Walls  | Reasonable |                         |
|  |              | Floors   | Good       |                         |
|  |              | Doors & Windows  | Reasonable |                         |
| <b>Staff Quarters</b>                            |              | Poor and located next to proposed sewer treatment site |            | Condemned               |
| <b>Stalled projects: Halls of residence etc.</b> |              | Deteriorating  |            | To be completed for use |
| <b>Generator House</b>                           |              | Poor condition   |            | Condemned/replaced      |

**Table 3.5. Mombasa Campus Buildings**

|                               |         |         |            |               |
|-------------------------------|---------|---------|------------|---------------|
| <b>Moana Research Station</b> | Mombasa | Roof    | Good       | Minor repairs |
|                               |         | Ceiling | Good       |               |
|                               |         | Walls   | Reasonable |               |
|                               |         | Floors  | Reasonable |               |



|                         |         |                 |            |  |
|-------------------------|---------|-----------------|------------|--|
|                         |         | Doors & Windows | -          |  |
| <b>Mombasa Uniplaza</b> | Mombasa | Roof            | Reasonable | Requires external painting and other minor repairs |
|                         |         | Ceiling         | Reasonable |  |
|                         |         | Walls           | Reasonable |  |
|                         |         | Floors          | Reasonable |  |
|                         |         | Doors & Windows | Reasonable |  |

**Table 3.6. Kikuyu Campus Buildings**

|  |                            |                 |            |               |
|--|----------------------------|-----------------|------------|---------------|
| <b>Old Admin. Block, Halls of residence</b>        | Kikuyu Campus              | Roof            | Reasonable | Minor repairs |
|  |                            | Ceiling         | Reasonable |               |
|  |                            | Walls           | Good       |               |
|  |                            | Floors          | Reasonable |               |
|  |                            | Doors & Windows | Good       |               |
| <b>Admin Block/Library</b>                         | Kikuyu Campus Library Hill | Roof            | Good       | As New        |
|  |                            | Ceiling         | Good       |               |
|  |                            | Walls           | Good       |               |
|  |                            | Floors          | Reasonable |               |
|  |                            | Doors & Windows | Good       |               |
| <b>School of Continuing and Distance Education</b> | Kikuyu Campus              | Roof            | Reasonable | Minor repairs |
|  |                            | Ceiling         | Reasonable |               |
|  |                            | Walls           | Good       |               |
|  |                            | Floors          | Good       |               |
|  |                            | Doors & Windows | Good       |               |

**Table 3.7. College of Agriculture and Veterinary Sciences Buildings**

| <b>Name of Building</b> | <b>Location of Building</b> | <b>Element of Building</b> | <b>Condition Assessment</b> | <b>Overall Building Rating</b> |
|-------------------------|-----------------------------|----------------------------|-----------------------------|--------------------------------|
| <b>Admin Block</b>      | Upper Kabete Campus         | Roof                       | Reasonable                  | Minor repairs                  |
|                         |                             | Ceiling                    | Good                        |                                |
|                         |                             | Walls                      | Good                        |                                |
|                         |                             | Floors                     | Good                        |                                |

|                        |                     |                 |            |               |
|------------------------|---------------------|-----------------|------------|---------------|
|                        |                     | Doors & Windows | Good       |               |
| <b>LARMAT Building</b> | Upper Kabete Campus | Roof            | Minimum    | Minor repairs |
|                        |                     | Ceiling         | Good       |               |
|                        |                     | Walls           | Reasonable |               |
|                        |                     | Floors          | Good       |               |
|                        |                     | Doors & Windows | Reasonable |               |

Table 3.8 College of Biological and physical Sciences

| Name of Building                   | Location of Building | Element of Building | Condition Assessment | Overall Building Rating |
|------------------------------------|----------------------|---------------------|----------------------|-------------------------|
| <b>Principal's Office</b>          | Chiromo Campus       | Roof                | Good                 | Minor repairs           |
|                                    |                      | Ceiling             | Reasonable           |                         |
|                                    |                      | Walls               | Reasonable           |                         |
|                                    |                      | Floors              | Reasonable           |                         |
|                                    |                      | Doors & Windows     | Reasonable           |                         |
| <b>Dept. of Chemistry Building</b> | Chiromo Campus       | Roof                | Good                 | Minor repairs           |
|                                    |                      | Ceiling             | Good                 |                         |
|                                    |                      | Walls               | Reasonable           |                         |
|                                    |                      | Floors              | Reasonable           |                         |
|                                    |                      | Doors & Windows     | Reasonable           |                         |

Table 3.9 Residential Buildings

| Name of Building        | Location of Building | Element of Building | Condition Assessment | Overall Building Rating |
|-------------------------|----------------------|---------------------|----------------------|-------------------------|
| <b>Kileleshwa Flats</b> | Kileleshwa           | Roof                | Holding              | Needs Serious Repairs   |
|                         |                      | Ceiling             | Reasonable           |                         |
|                         |                      | Walls               | Reasonable           |                         |
|                         |                      | Floors              | Good                 |                         |
|                         |                      | Doors & Locks       | Holding              |                         |
|                         |                      | Roof                | Reasonable           |                         |

|                          |                         |               |             |                       |
|--------------------------|-------------------------|---------------|-------------|-----------------------|
| <b>Mamlaka Flats</b>     | <b>Mamlaka</b>          | Ceiling       | Good        | Minor Repairs         |
|                          |                         | Walls         | Good        |                       |
|                          |                         | Floors        | Reasonable  |                       |
|                          |                         | Doors & Locks |             |                       |
| <b>St. Andrews Flats</b> | <b>State House Road</b> | Roof          | Holding     | Needs serious repairs |
|                          |                         | Ceiling       | Reasonable  |                       |
|                          |                         | Walls         | Reasonable  |                       |
|                          |                         | Floors        | Good        |                       |
|                          |                         | Doors & Locks | Reasonable  |                       |
|                          |                         | Foundation    | Rising Damp |                       |

## ANNEXE 2: CONDITION RATING FOR PLANT AND EQUIPMENT

**Table.3.10 College of Agriculture and Veterinary Sciences Equipment Condition**

| <b>Equipment</b>     | <b>Location</b>      | <b>Condition</b> | <b>Remedial Action</b> |
|----------------------|----------------------|------------------|------------------------|
| Air Compressor       | CAVS . Soil Labs     | Reasonable       | Needs minor repairs    |
| Ammonia Distillation | CAVS . Soil Labs     | Poor             | Replace                |
| Atomic Absorption    | CAVS . Soil Labs     | Poor             | Replace                |
| Balance -2-          | CAVS . Land Resource | Poor             | Needs serious repair   |
| Balance              | CAVS . Land Resource | Reasonable       | Needs minor repairs    |
| Bench Centrifuge     | CAVS . Vet Pathology | Reasonable       | Needs minor repairs    |
| Centrifuge -2-       | CAVS . Land Resource | Reasonable       | Needs minor repairs    |
| Centrifuge -2-       | CVS . Public Health  | Reasonable       | Needs minor repairs    |
| Centrifuge -3-       | CAVS . Land Resource | Poor             | Replace                |
| Centrifuge           | CVS . Land Resource  | Reasonable       | Needs minor repairs    |
| Centrifuge           | CAVS . PHPT          | Poor             | Replace                |
| Centrifuge           | CAVS . Soil Science  | Reasonable       | Needs minor repairs    |
| Centrifuge           | CAVS . Public Health | Poor             | Needs serious repairs  |
| Centrifuge Fridge    | CAVS . Land Resource | Reasonable       | Needs minor repairs    |
| Cold Room            | CAVS . Lab 223       | Poor             | Needs serious repairs  |
| Cold Room            | CAVS . CSD           | Reasonable       | Needs minor repairs    |

|                          |                                       |            |                        |
|--------------------------|---------------------------------------|------------|------------------------|
| Compressor . 2-          | CAVS . Public Health                  | Poor       | Replace                |
| Compressor               | CAVS . Public Health                  | Reasonable | Needs minor repairs    |
| Debital Shaker           | CAVS . Soil Microbiology lab          | Reasonable | Needs minor repairs    |
| Distillation Unit - 2-   | CAVS - LARMAT                         | Reasonable | Needs minor repairs    |
| Distillation Unit        | CAVS - LARMAT                         | Poor       | Replace                |
| Distillation Unit        | CAVS . Soil Science                   | Poor       | Replace                |
| Electronic Balance       | CAVS . Soil Microbiology lab          | Reasonable | Needs minor repairs    |
| Electronic Scale         | CAVS - LARMAT                         | Reasonable | Needs minor repairs    |
| Extractor Fan            | CAVS . PHPT                           | Poor       | Replace                |
| Extractor Fans           | CAVS . Public Health                  | Poor       | Replace                |
| Fermentor                | CAVS . Soil Microbiology lab          | Reasonable | Needs minor repairs    |
| Fibre Dept               | CAVS . Soil Chemistry & Fertility lab | Poor       | Replace                |
| Fridge                   | CAVS . Lab 223                        | As New     | Preventive maintenance |
| Fridge                   | CAVS . Soil Microbiology lab          | Good       | Preventive maintenance |
| Fridges(3No)             | CAVS . Plant pathology                | Poor       | Replace                |
| Fume Chambers & Motors   | CAVS . Land Resource                  | Poor       | Replace                |
| Fume Chambers            | CAVS - LARMAT                         | Poor       | Needs critical repairs |
| Furnace                  | CAVS - LARMAT                         | Poor       | Replace                |
| Incubator                | CAVS - LARMAT                         | Poor       | Replace                |
| Incubator                | CAVS - PHPT                           | Poor       | Replace                |
| Incubator                | CAVS . Soil Microbiology lab          | Poor       | Replace                |
| Incubators (3No)         | Oven (2)                              | Poor       | Critical repairs       |
| Microflow                | CAVS . Soil Microbiology lab          | Reasonable | Needs minor repairs    |
| Muffle Furnace           | CAVS - PHPT                           | Poor       | Replace                |
| Muffle Furnace           | CAVS . Food Science                   | Poor       | Critical repairs       |
| Nitrogen Distilling Unit | CAVS . Food Science                   | Poor       | Critical repairs       |
| Operating Table          | CAVS - CSD                            | Good       | Needs minor repairs    |

|                                    |                        |            |                        |
|------------------------------------|------------------------|------------|------------------------|
| Oven (2)                           | CAVS . Land Resource   | Poor       | Replace                |
| Oven (3)                           | CAVS . Land Resource   | Poor       | Replace                |
| Oven                               | CAVS . Land Resource   | Good       | Needs minor repairs    |
| Oven (2)                           | CAVS . Plant Pathology | Poor       | Needs critical repairs |
| Ph Meter                           | CAVS . Food Science    | Poor       | Needs critical repairs |
| Photometer                         | CAVS . Public Health   | Good       | Needs calibration      |
| Pressure Pump                      | CAVS - LARMAT          | Poor       | Needs critical repairs |
| Print Enlarger<br>Year of Man 1990 | CAVS . Vet Pathology   | Good       | Needs minor repairs    |
| Pump                               | CAVS . Land Resource   | Good       | Needs minor repairs    |
| Pump                               | CAVS . PHPT            | Reasonable | Needs minor repairs    |
| Pump                               | CAVS . CSD             | Good       | Needs minor repairs    |
| Scale                              | CAVS . CSD             | Poor       | Replace                |
| Shaker Incubator                   | CAVS . Food Science    | Poor       | Needs critical repairs |
| Spectro-Photometer                 | CAVS . Public Health   | Poor       | Needs critical repairs |
| Sterilization Oven                 | CAVS . Lab 223         | Poor       | Needs critical repairs |
| Sterilizer                         | CAVS . CSD             | Poor       | Needs critical repairs |
| Theoride meter                     | CAVS . Public Health   | Good       | Needs minor repairs    |
| Ultra Microton                     | CAVS . Vet Pathology   | Good       | Needs minor repairs    |
| Vacuum Oven                        | CAVS . Food Science    | Poor       | Replace                |
| Vacuum Pump<br>Year of Man 2005    | CAVS . Vet Pathology   | Good       | Needs minor repairs    |
| Air Compressor                     | CAVS . Soil Labs       | Good       | Needs minor repairs    |
| Ammonia Distillation               | CAVS . Soil Labs       | Poor       | Replace                |
| Atomic Absorption                  | CAVS . Soil Labs       | Poor       | Replace                |
| Balance -2-                        | CAVS . Land Resource   | Poor       | Needs critical repairs |
| Balance                            | CAVS . Land Resource   | Good       | Needs minor repairs    |
| Bench Centrifuge                   | CAVS . Vet Pathology   | Poor       | Needs critical repairs |
| Centrifuge -2-                     | CAVS . Land Resource   | Good       | Needs minor repairs    |
| Centrifuge -2-                     | CVS . Public Health    | Good       | Needs minor repairs    |
| Centrifuge -3-                     | CAVS . Land Resource   | Poor       | Replace                |
| Centrifuge                         | CVS . Land Resource    | Good       | Needs minor repairs    |
| Centrifuge                         | CAVS . PHPT            | Poor       | Needs critical repairs |
| Centrifuge                         | CAVS . Soil Science    | Good       | Needs minor repairs    |
| Centrifuge                         | CAVS . Public Health   | Poor       | Needs critical repairs |

|                          |                                       |        |                        |
|--------------------------|---------------------------------------|--------|------------------------|
| Centrifuge Fridge        | CAVS . Land Resource                  | Good   | Needs minor repairs    |
| Cold Room                | CAVS . Lab 223                        | Poor   | Needs critical repairs |
| Cold Room                | CAVS . CSD                            | Good   | Needs minor repairs    |
| Compressor . 2-          | CAVS . Public Health                  | Poor   | Replace                |
| Compressor               | CAVS . Public Health                  | Good   | Needs minor repairs    |
| Debital Shaker           | CAVS . Soil Microbiology lab          | Good   | Needs minor repairs    |
| Distillation Unit - 2-   | CAVS - LARMAT                         | Good   | Needs minor repairs    |
| Distillation Unit        | CAVS - LARMAT                         | Poor   | Replace                |
| Distillation Unit        | CAVS . Soil Science                   | Poor   | Replace                |
| Electronic Balance       | CAVS . Soil Microbiology lab          | Good   | Needs minor repairs    |
| Electronic Scale         | CAVS - LARMAT                         | Good   | Needs minor repairs    |
| Extractor Fan            | CAVS . PHPT                           | Poor   | Replace                |
| Extractor Fans           | CAVS . Public Health                  | Poor   | Needs critical repairs |
| Fermentor                | CAVS . Soil Microbiology lab          | Good   | Needs minor repairs    |
| Fibre Dept               | CAVS . Soil Chemistry & Fertility lab | Poor   | Replace                |
| Fridge                   | CAVS . Lab 223                        | As New | Preventive maintenance |
| Fridge                   | CAVS . Soil Microbiology lab          | Good   | Needs minor repairs    |
| Fridges(3No)             | CAVS . Plant pathology                | Poor   | Needs critical repairs |
| Fume Chambers & Motors   | CAVS . Land Resource                  | Poor   | Replace                |
| Fume Chambers(6Nos)      | CAVS - LARMAT                         | Poor   | Needs critical repairs |
| Furnace                  | CAVS - LARMAT                         | Poor   | Needs critical repairs |
| Incubator                | CAVS - LARMAT                         | Poor   | Needs critical repairs |
| Incubator                | CAVS - PHPT                           | Poor   | Needs critical repairs |
| Incubator                | CAVS . Soil Microbiology lab          | Poor   | Replace                |
| Incubators (3No)         | CAVS . Animal Pathology               | Poor   | Needs critical repairs |
| Microflow                | CAVS . Soil Microbiology lab          | Good   | Needs minor repairs    |
| Muffle Furnace           | CAVS - PHPT                           | Poor   | Replace                |
| Muffle Furnace           | CAVS . Food Science                   | Poor   | Needs critical repairs |
| Nitrogen Distilling Unit | CAVS . Food Science                   | Poor   | Needs critical repairs |

|                                    |                          |           |                        |
|------------------------------------|--------------------------|-----------|------------------------|
| Operating Table                    | CAVS - CSD               | Good      | Needs minor repairs    |
| Oven (2)                           | CAVS . Land Resource     | Poor      | Needs critical repairs |
| Oven (3)                           | CAVS . Land Resource     | Poor      | Replace                |
| Oven                               | CAVS . Land Resource     | Good      | Needs minor repairs    |
| Oven (2)                           | CAVS . Plant Pathology   | Poor      | Needs critical repairs |
| Ph Meter                           | CAVS . Food Science      | Poor      | Needs critical repairs |
| Photometer                         | CAVS . Public Health     | Good      | Needs Calibration      |
| Pressure Pump                      | CAVS - LARMAT            | Poor      | Needs critical repairs |
| Print Enlarger<br>Year of Man 1990 | CAVS . Vet Pathology     | Good      | Needs minor repairs    |
| Pump                               | CAVS . Land Resource     | Good      | Needs minor repairs    |
| Pump                               | CAVS . PHPT              | Good      | Needs minor repairs    |
| Pump                               | CAVS . CSD               | Good      | Needs minor repairs    |
| Scale                              | CAVS . CSD               | Very poor | Replace                |
| Shaker Incubator                   | CAVS . Food Science      | Very poor | Replace                |
| Spectro-Photometer                 | CAVS . Public Health     | Working   | Needs serious repairs  |
| Sterilization Oven                 | CAVS . Lab 223           | Working   | Needs serious repairs  |
| Sterilizer                         | CAVS . CSD               | Working   | Needs serious repairs  |
| Theoride meter                     | CAVS . Public Health     | Good      | Needs minor repairs    |
| Ultra Microton                     | CAVS . Vet Pathology     | Good      | Needs minor repairs    |
| Vacuum Oven                        | CAVS . Food Science      | Very Poor | Replace                |
| Vacuum Pump<br>Year of Man 2005    | CAVS . Vet Pathology     | Good      | Needs minor repairs    |
| Circular Saw                       | CAVS . Animal Pathology  | Very Poor | Replace                |
| Cold Room                          | CAVS . Animal Pathology  | Very Poor | Replace                |
| Egg Incubator                      | CAVS- Egg Incubator Room | Very Poor | Replace                |
| Oven                               | CAVS . Animal Pathology  | Very Poor | Replace                |
| Water Pump                         | CAVS- Mandela Rd         | Working   | Needs serious repairs  |
| Cold Room (2No)                    | CAVS . Animal Pathology  | Good      | Needs minor repairs    |
| Crane                              | CAVS . Animal Pathology  | Good      | Needs minor repairs    |
| Fridge                             | CAVS . Animal Pathology  | Very Poor | Replace                |
| Packaging Machine                  | CAVS- Water Plant        | As New    | Ok                     |

|                     |                               |           |                       |
|---------------------|-------------------------------|-----------|-----------------------|
| Autoclaver(No3)     | CAVS . Animal Pathology       | Very Poor | Replace               |
| Centrifuge          | CAVS . Instrument Room No 160 | Working   | Needs serious repairs |
| Deep freezer(No3)   | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Deep freezer        | CAVS . Animal Pathology       | Working   | Needs serious repairs |
| Electron microscope | CAVS . Animal Pathology       | As New    | Ok                    |
| Fridge(No2)         | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Fridge              | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Incubators (3No)    | CAVS . Animal Pathology       | Working   | Needs serious repairs |
| Instron             | CAVS . Instrument Room No 160 | Working   | Needs serious repairs |
| Micro-projector     | CAVS . Animal Pathology       | Very Poor | Replace               |
| Photometer(No2)     | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Ultra-Centrifuge    | CAVS . Instrument Room No 160 | Very Poor | Replace               |
| Vacuum Pump         | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Centrifuge          | CAVS . Animal Pathology       | Working   | Needs serious repairs |
| Deep freezer(No2)   | CAVS . Animal Pathology       | Working   | Needs serious repairs |
| Deep freezer(No4)   | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Freezer-Drier)      | CAVS . Instrument Room No 160 | Working   | Needs serious repairs |
| Fridge(No3)         | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Incubators (No2)    | CAVS . Animal Pathology       | Working   | Needs serious repairs |
| Incubators          | CAVS . Animal Pathology       | Good      | Needs minor repairs   |
| Lift                | CAVS . Animal Pathology       | Very Poor | Replace               |
| Microscope          | CAVS . Animal Pathology       | Good      | Needs minor repairs   |



|                  |                         |         |                               |
|------------------|-------------------------|---------|-------------------------------|
| Rotary Microdome | CAVS . Animal Pathology | Good    | Needs minor repairs           |
| Vacuum Plant     | CAVS . Animal Pathology | Replace | Improve maintenance standards |
| Water Heater     | CAVS . Animal Pathology | Working | Needs serious repairs         |

**Table 3.11 College of Health Sciences Equipment Condition**

| <b>Equipment</b>                               | <b>Location</b>         | <b>Condition</b> | <b>Remedial Action</b> |
|--|-------------------------|------------------|------------------------|
| Air Compressor                                 | CHS . UNITID KACP       | As new           | Ok                     |
| Air Conditioning Unit -2-                      | CHS . UNITID            | Good             | Needs minor repairs    |
| Air Conditioning Unit                          | CHS - KAVI              | Good             | Needs minor repairs    |
| Air Conditioning Unit                          | CHS - Immunology        | Good             | Needs minor repairs    |
| Air Conditioning                               | CHS - UNITID            | Good             | Needs minor repairs    |
| Back UP Generator                              | CHS - KAVI              | Good             | Needs minor repairs    |
| Back UP Generator                              | CHS . UNITID KACP       | As new           | As new                 |
| Booster water pump                             | CHS . UNITID KACP       | As new           | As new                 |
| Centrifuge                                     | CHS . Internal Medicine | Good             | Needs minor repairs    |
| Condenser-Compressor unit                      | CHS . UNITID            | Good             | Needs minor repairs    |
| Evaporator system                              | CHS . UNITID            | As new           | Ok As new              |
| Extractor Fan & Blower -2-<br>Year of Man 2005 | CHS . UNITID            | Good             | Needs minor repairs    |

|  |                         |         |                               |
|--|-------------------------|---------|-------------------------------|
| Extractor Fan & Blower<br>Year of Man 2005 | CHS . UNITID            | As new  | As new                        |
| Freezer -2-                                | CHS - Immunology        | Working | Needs serious repairs         |
| Freezer -2-                                | CHS - KAVI              | As new  | As new                        |
| Freezer                                    | CHS - KAVI              | Good    | Needs minor repairs           |
| Freezer                                    | CHS - Immunology        | Replace | Improve maintenance standards |
| Freezer                                    | CHS - Immunology        | Working | Needs serious repairs         |
| Fridge -2-                                 | CHS - KAVI              | Good    | Needs minor repairs           |
| Fridge -3-                                 | CHS - KAVI              | Good    | Needs minor repairs           |
| Fridge -4-                                 | CHS - KAVI              | Good    | Needs minor repairs           |
| Fridge                                     | CHS - KAVI              | Good    | Needs minor repairs           |
| Fridge                                     | CHS . Internal Medicine | Good    | Needs minor repairs           |
| Incubator                                  | CHS - Immunology        | Replace | Improve maintenance standards |
| Water pump<br>Year of Man 2005             | CHS . School of Nursing | Good    | Needs minor repairs           |
| <b>Dental School</b>                       |                         |         |                               |
| Dental Chair (No1)                         | CHS- Dental School      | Good    | Needs minor repairs           |
| Dental Chair (No2)<br>Year of Man 1978     | CHS- Dental School      | Working | Needs serious repairs         |
| Dental Chair (No3)<br>Year of Man 1978     | CHS- Dental School      | Good    | Needs minor repairs           |
| Dental Chair (No4)<br>Year of Man 1978     | CHS- Dental School      | Good    | Needs minor repairs           |
| Dental Chair (No5)<br>Year of Man 1978     | CHS- Dental School      | Good    | Needs minor repairs           |
| Dental Chair (No6)<br>Year of Man 1978     | CHS- Dental School      | Good    | Needs minor repairs           |
| Dental Chair (No7)<br>Year of Man 1978     | CHS- Dental School      | Poor    | Replace                       |

|   |                    |         |                       |
|---|--------------------|---------|-----------------------|
| Dental Chair (No8)<br>Year of Man 1978  | CHS- Dental School | Working | Needs serious repairs |
| Dental Chair (No9)<br>Year of Man 1978  | CHS- Dental School | Good    | Needs minor repairs   |
| Dental Chair (No10)<br>Year of Man 2006 | CHS- Dental School | Poor    | Replace               |
| Dental Chair (No11)<br>Year of Man 2006 | CHS- Dental School | As New  | As new                |
| Dental Chair (No12)<br>Year of Man 2006 | CHS- Dental School | As New  | As new                |
| Dental Chair (No13)<br>Year of Man 1978 | CHS- Dental School | Good    | Needs minor repairs   |
| Dental Chair (No14)<br>Year of Man 2006 | CHS- Dental School | As New  | As New                |
| X-ray Machine<br>Year of Man 1978       | CHS- Dental School | Good    | Needs minor repairs   |

**Table 3.12 College of Architecture and Engineering Equipment Condition**

| <b>Equipment</b>                              | <b>Location</b>         | <b>Condition</b> | <b>Remedial Action</b> |
|---|-------------------------|------------------|------------------------|
| Balance machine                               | Engineering Block Civil | Good             | Needs minor repairs    |
| Balance machine                               | Engineering Block Civil | Good             | Needs minor repairs    |
| Beam & Transfer machine                       | Engineering Block Civil | Good             | Needs minor repairs    |
| C.B.R machine                                 | Engineering Block Civil | Good             | Needs minor repairs    |
| Compacting factor machine<br>Year of Man 1965 | Engineering Block Civil | Good             | Needs minor repairs    |
| Compression machine -2-                       | Engineering Block Civil | Good             | Needs minor repairs    |
| Compression machine -3-                       | Engineering Block Civil | Very Poor        | Replace                |
| Compression machine -4-                       | Engineering Block Civil | Very Poor        | Replace                |
| Compression machine -5-                       | Engineering Block Civil | Working          | Needs serious repairs  |
| Compression machine                           | Engineering Block Civil | Working          | Needs serious repairs  |

|   |                              |           |                               |
|---|------------------------------|-----------|-------------------------------|
| Constant temperature bath machine<br>Year of Man 1965 | Engineering Block Civil      | Working   | Needs serious repairs         |
| Drying Oven 2 machine<br>Year of Man 1965             | Engineering Block Civil      | Working   | Needs serious repairs         |
| Drying Oven 3 machine                                 | Engineering Block Civil      | Replace   | Improve maintenance standards |
| Drying Oven machine<br>Year of Man 1965               | Engineering Block Civil      | Good      | Needs minor repairs           |
| H.P.C Compressor machine                              | Engineering Block Civil      | Good      | Needs minor repairs           |
| L.A. Abrasion -2- machine<br>Year of Man 1965         | Engineering Block Civil      | Good      | Needs minor repairs           |
| L.A. Abrasion machine<br>Year of Man 1969             | Engineering Block Civil      | Working   | Needs serious repairs         |
| Mixer machine -2-                                     | Engineering Block Civil      | Working   | Needs serious repairs         |
| Mixer machine -3-<br>Year of Man 1965                 | Engineering Block Civil      | Good      | Needs minor repairs           |
| Mixer machine   | Engineering Block Civil      | Good      | Needs minor repairs           |
| Oven machine  | Engineering Block Civil      | Very poor | Replace                       |
| Roller machine  | Engineering Block Civil      | Good      | Needs minor repairs           |
| Sieve shaker machine<br>Year of Man 1965              | Engineering Block Civil      | Good      | Needs minor repairs           |
| Stone Saw   | Engineering Block Civil      | Good      | Needs minor repairs           |
| Vibrator machine<br>Year of Man 1969                  | Engineering Block Civil      | Good      | Needs minor repairs           |
| A/C   | Institute of Nuclear Science | Good      | Needs minor repairs           |
| A/C   | Chuna Server Room            | As New    | Ok                            |
| A/C Fan Motor-ED1                                     | ED BLDG                      | Poor      | Replace                       |
| A/C Fan Motor-ED2                                     | ED BLDG                      | Poor      | Replace                       |

|  |                             |             |                        |
|--|-----------------------------|-------------|------------------------|
| A/C Fan Motor-Ground Floor                     | ED Building                 | Poor        | Replace                |
| Band Saw HD/46/1<br>Year of Man-1952           | Mechanical Engineering Labs | Good        | Needs minor repairs    |
| Capstan lathe HD/331/1<br>Year of Man-1952     | Mechanical Engineering Labs | Working     | Needs serious repairs  |
| Centre lathe HD/331/12<br>Year of Man-1954     | Mechanical Engineering Labs | Working     | Obsolete               |
| Centrifugal fan                                | Mechanical Engineering Labs | Good        | Needs minor repairs    |
| Circular cutter<br>Year of Man-1956            | Mechanical Engineering Labs | Good        | Needs minor repairs    |
| Creep test Machine                             | Mechanical Engineering Labs | Good        | Needs minor repairs    |
| Cylindrical grinding machine<br>HD/340/1       | Mechanical Engineering Labs | Good        | Needs minor repairs    |
| Diffuser                                       | Mechanical Engineering Labs | Good        | Needs minor repairs    |
| Drilling machine 2 SM3<br>Year of Man-1955     | Mechanical Engineering Labs | Working     | Needs serious repairs  |
| Drilling machine 162484/16<br>Year of Man-1955 | Mechanical Engineering Labs | Working     | Needs serious repairs  |
| E6 Engine 162484/16                            | Mechanical Engineering Labs | Working     | Needs serious repairs  |
| Elevator                                       | ED Building                 | Broken down | Replace                |
| Engraver HD/338/1<br>Year of Man-1969          | Mechanical Engineering Labs | Poor        | Needs critical repairs |
| Folding machine<br>Year of Man-1964            | Mechanical Engineering Labs | Poor        | Needs serious repairs  |
| Furnace 2 HD/339                               | Mechanical Engineering Labs | Poor        | Requires major repairs |
| Furnace MS9                                    | Mechanical Engineering Labs | Poor        | Requires major repairs |
| Grinding machine 2 HD/347/1                    | Mechanical Engineering Labs | Poor        | Requires major repairs |

|   |                                |           |                               |
|---|--------------------------------|-----------|-------------------------------|
| Guillotine machine<br>Year of Man-1956            | Mechanical Engineering<br>Labs | Working   | Obsolete                      |
| Hardness tester .<br>Vickers<br>HD/368/1          | Mechanical Engineering<br>Labs | Poor      | Replace                       |
| Hardness tester .<br>Brinel<br>HD/366/1           | Mechanical Engineering<br>Labs | Good      | Needs minor repairs           |
| Hardness tester .<br>Rc 2<br>HD/369/1             | Mechanical Engineering<br>Labs | Working   | Requires major repairs        |
| Horizontal miller<br>HD/334/1<br>Year of Man-1952 | Mechanical Engineering<br>Labs | Working   | Improve maintenance standards |
| Internal Elastics<br>Force machine                | Mechanical Engineering<br>Labs | Poor      | Improve maintenance standards |
| Izod testing machine<br>Year of Man-1954          | Mechanical Engineering<br>Labs | Poor      | Improve maintenance standards |
| Lathe machine 2<br>HD/331/6<br>Year of Man-1955   | Mechanical Engineering<br>Labs | Poor      | Replace                       |
| Lathe machine 3<br>HD/331/7<br>Year of Man-1955   | Mechanical Engineering<br>Labs | Working   | Requires major repairs        |
| Lathe machine 4<br>HD/331/5<br>Year of Man-1955   | Mechanical Engineering<br>Labs | Working   | Requires major repairs        |
| Lathe machine 5<br>HD/331/11<br>Year of Man-1955  | Mechanical Engineering<br>Labs | Working   | Improve maintenance standards |
| Lathe machine 6<br>HD/331/13                      | Mechanical Engineering<br>Labs | Working   | Requires major repairs        |
| Lathe machine 7<br>HD/331/<br>Year of Man-1955    | Mechanical Engineering<br>Labs | Working   | Requires major repairs        |
| Lathe machine 8<br>HD/331/13                      | Mechanical Engineering<br>Labs | Poor      | Improve maintenance standards |
| Lathe machine 9<br>HD/331/12                      | Mechanical Engineering<br>Labs | Poor      | Improve maintenance standards |
| Lathe machine<br>Year of Man-1955                 | Mechanical Engineering<br>Labs | Very poor | Replace                       |
| Marking Table<br>HD/342/1                         | Mechanical Engineering<br>Labs | Working   | Requires major repairs        |

|   |                                |           |                        |
|---|--------------------------------|-----------|------------------------|
| Surface Grinder<br>HD/336/1<br>Year of Man-1955   | Mechanical Engineering<br>Labs | Working   | Requires major repairs |
| Power Guillotine<br>Year of Man-1964              | Mechanical Engineering<br>Labs | Working   | Requires major repairs |
| Power Saw<br>HD/346/1<br>Year of Man-1970         | Mechanical Engineering<br>Labs | Working   | Requires major repairs |
| Sensitive Drilling<br>machine<br>Year of Man-1969 | Mechanical Engineering<br>Labs | Working   | Requires major repairs |
| Shaping machine<br>MS2                            | Mechanical Engineering<br>Labs | Working   | Requires major repairs |
| Shearing machine<br>Year of Man-1956              | Mechanical Engineering<br>Labs | Working   | Requires major repairs |
| Smoke Tunnel                                      | Mechanical Engineering<br>Labs | Very poor | Replace                |
| S/N test machine<br>Year of Man-1954              | Mechanical Engineering<br>Labs | Working   | Obsolete               |
| Spring test machine.<br>Year of Man-1961          | Mechanical Engineering<br>Labs | Very poor | Replace                |
| Strain machine<br>HD/373/1                        | Mechanical Engineering<br>Labs | Working   | Requires major repairs |
| Strut Beam Deflector<br>Machine                   | Mechanical Engineering<br>Labs | Working   | Needs minor repairs    |
| Supersonic wind<br>tunnel                         | Mechanical Engineering<br>Labs | Working   | Needs minor repairs    |
| Surface Grinder<br>HD/337/1<br>Year of Man-1955   | Mechanical Engineering<br>Labs | Working   | Needs minor repairs    |
| Surface Grinder<br>HD/336/1<br>Year of Man-1955   | Mechanical Engineering<br>Labs | Working   | Needs minor repairs    |
| TAC Machine                                       | Mechanical Engineering<br>Labs | Working   | Needs minor repairs    |
| Tensometer<br>Machine                             | Mechanical Engineering<br>Labs | Working   | Ok                     |
| Thickness Planer<br>Year of Man-1955              | Mechanical Engineering<br>Labs | Very poor | Replace                |
| TIC Machine 2                                     | Mechanical Engineering<br>Labs | Working   | Needs minor repairs    |

|  |                             |            |                               |
|--|-----------------------------|------------|-------------------------------|
| TIC Machine 3                                      | Mechanical Engineering Labs | Working    | Needs minor repairs           |
| TIC Machine HD/3358/3                              | Mechanical Engineering Labs | Working    | Needs minor repairs           |
| Torsion Machine 2 SOM -16 HD/363                   | Mechanical Engineering Labs | Working    | Needs critical repairs        |
| Torsion Machine HD/358/4                           | Mechanical Engineering Labs | Very poor  | Replace                       |
| Two stage air compressor Year of Man-1955          | Mechanical Engineering Labs | Working    | Obsolete                      |
| Universal test Machine 2                           | Mechanical Engineering Labs | Working    | Improve maintenance standards |
| Universal testing Machine HD/358/4                 | Mechanical Engineering Labs | Very poor  | Replace                       |
| Variable compression Engine Year of Man-1927       | Mechanical Engineering Labs | Reasonable | Improve maintenance standards |
| Vertical milling 1 Machine HD/341/2                | Mechanical Engineering Labs | Good       | Requires regular maintenance  |
| Vertical milling Machine HD/341/1 Year of Man-1969 | Mechanical Engineering Labs | Reasonable | Needs serious repairs         |
| Water pump   | ED Building                 | Very poor  | Replace                       |
| Wind tunnel machine                                | Mechanical Engineering Labs | Good       | Needs minor repairs           |
| Wind tunnel subsonic machine                       | Mechanical Engineering Labs | Good       | Needs minor repairs           |
| Working bench 2 F53-F514 Year of Man-1969          | Mechanical Engineering Labs | Reasonable | Needs minor repairs           |
| Working bench 3 HD/44/1                            | Mechanical Engineering Labs | Reasonable | Needs minor repairs           |
| Working bench F53-F514 Year of Man-1969            | Mechanical Engineering Labs | Reasonable | Needs minor repairs           |

**Table 3.13 College of Biological and Physical Sciences Equipment Condition**



| <b>Equipment</b>   | <b>Location</b>                                | <b>Condition</b> | <b>Remedial Action</b> |
|--------------------|--|------------------|------------------------|
| Drying oven        | Chiromo campus-<br>Physiology lab              | Reasonable       | Needs minor repairs    |
| Weighing balance   | Chiromo campus-<br>Physiology lab              | Working          | Obsolete               |
| Fridge             | Chiromo campus-<br>Physiology lab              | Good             | Needs minor repairs    |
| Balance            | Chiromo campus-<br>Physiology lab              | Very poor        | Replace                |
| Heater/Condenser   | Chiromo campus-<br>Physiology lab              | Very poor        | Replace                |
| Centrifuge         | Chiromo campus-<br>Physiology lab              | Reasonable       | Needs minor repairs    |
| Ph meter           | Chiromo campus-<br>Physiology lab              | Good             | Needs minor repairs    |
| Water distiller(2) | Chiromo campus-<br>Physiology lab              | Good             | Needs minor repairs    |
| Oven               | Chiromo campus-<br>Physiology lab              | Very poor        | Replace                |
| Fridge (No2)       | Chiromo campus-<br>Physiology lab              | Very poor        | Replace                |
| Incubator          | Chiromo campus-<br>Physiology lab              | Very poor        | Replace                |
| Fridge (No3)       | Chiromo campus-<br>Physiology lab              | Very poor        | Replace                |
| Hydrant system     | Chiromo campus-<br>Physiology lab              | Reasonable       | Needs minor repairs    |
| Incubator/Shaker   | Chiromo campus-<br>MIRCN lab                   | Very poor        | Replace                |
| Fridge             | Chiromo campus-<br>MIRCN lab                   | Working          | Needs minor repairs    |
| Incubator          | Chiromo campus-<br>MIRCN lab                   | Very poor        | Replace                |
| Microflow          | Chiromo campus-<br>MIRCN lab                   | Good             | Needs minor repairs    |
| Hydrant system     | Chiromo campus-<br>MIRCN lab                   | Good             | Needs minor repairs    |
| Fire extinguisher  | Chiromo campus- SBS<br>Block1                  | Good             | Needs minor repairs    |
| Fume extractor     | Chiromo campus- SBS<br>Block1 All labs         | Good             | Needs minor repairs    |
| Deep freezer       | Chiromo campus- SBS<br>Block1 genetic research | Ok               | Needs minor repairs    |

|   |   |           |                           |
|---|---|-----------|---------------------------|
|   | lab   |           |                           |
| Fridge  | Chiromo campus- SBS Block1 genetic research lab | Good      | Needs minor repairs       |
| Oven/Incubator (No2)                              | Chiromo campus- SBS Block1                      | Good      | Needs minor repairs       |
| Centrifuge  | Chiromo campus- SBS Block1 genetic research lab | Good      | Needs minor repairs       |
| Microflow   | Chiromo campus- SBS Block1 genetic research lab | Good      | Needs minor repairs       |
| Oven/Incubator                                    | Chiromo campus- SBS Block1 genetic research lab | Good      | Needs minor repairs       |
| Incubator/Shaker                                  | Chiromo campus- SBS Block1 genetic research lab | Very poor | Replace                   |
| Thin film thickness equipment<br>Year of Man 2002 | Chiromo campus- Physics Department              | Good      | Needs minor repairs       |
| Vacuum pump (No2)<br>Year of Man 1978             | Chiromo campus- Physics Department RM230C       | Good      | Needs minor repairs       |
| Fridge  | Chiromo campus- Physics Department RM230C       | Good      | Needs minor repairs       |
| Cooling system                                    | Chiromo campus- Physics Department RM230C       | As New    | As New                    |
| Fire extinguisher                                 | Chiromo campus- Physics Department RM230C       | Good      | Needs regular maintenance |
| Furnace   | Chiromo campus- Physics Department RM224A       | Good      | Needs minor repairs       |
| Chiller<br>Year of Man 1995                       | Chiromo campus- Physics Department RM230C       | Good      | Needs minor repairs       |
| Toilet extractor                                  | Chiromo campus- Physics Department All toilets  | Poor      | Replace                   |
| Fire extinguisher                                 | Chiromo campus- Chemistry Department All labs   | Good      | Needs minor repairs       |

|                             |   |            |                     |
|-----------------------------|---|------------|---------------------|
| Fume extractor              | Chiromo campus-<br>Chemistry Department<br>All labs       | Reasonable | Needs minor repairs |
| Oven                        | Chiromo campus-<br>Chemistry Department<br>Analytical lab | Good       | Needs calibration   |
| Oven (No6)                  | Chiromo campus-<br>Chemistry Department<br>All labs       | Good       | Needs minor repairs |
| Furnace                     | Chiromo campus-<br>Chemistry Department<br>All labs       | Good       | Needs minor repairs |
| Air pump                    | Chiromo campus-<br>Chemistry Department<br>Analytical lab | Reasonable | Needs minor repairs |
| Toilet extractor            | Chiromo campus-<br>Chemistry Department<br>All labs       | Poor       | Replace             |
| Air compressor              | Chiromo campus-<br>Chemistry Department<br>Basement       | Good       | Needs minor repairs |
| Air conditioner             | Chiromo campus-<br>Chemistry Department<br>Basement       | Reasonable | Needs minor repairs |
| Ice maker (No2)             | Chiromo campus-<br>Chemistry Department<br>G26            | Very poor  | Replace             |
| Hydrant system              | Chiromo campus-<br>Chemistry Department<br>All floors     | Very poor  | Replace             |
| Oven (No3)                  | Chiromo campus- New<br>844 Phy-Chem lab                   | Good       | Needs minor repairs |
| Top pan balance             | Chiromo campus- New<br>844 Phy-Chem lab                   | Reasonable | Needs minor repairs |
| Analytical balance<br>(No2) | Chiromo campus- New<br>844 Phy-Chem lab                   | Reasonable | Needs minor repairs |
| Bomb calorimeter            | Chiromo campus- New<br>844 Phy-Chem lab                   | Good       | Needs minor repairs |
| Bomb calorimeter<br>(No2)   | Chiromo campus- New<br>844 Phy-Chem lab                   | Reasonable | Needs major repairs |
| Emergency shower<br>(No3)   | Chiromo campus- New<br>844 Phy-Chem lab                   | Reasonable | Needs minor repairs |
| Fan (No3)                   | Chiromo campus- New<br>844 Phy-Chem lab                   | Good       | Needs minor repairs |

|   |   |            |                           |
|---|---|------------|---------------------------|
| Fume extractor                                | Chiromo campus- New 844 Phy-Chem lab                    | Good       | Needs minor repairs       |
| Fire extinguisher (No4)                       | Chiromo campus- New 844 Phy-Chem lab                    | Good       | Needs regular maintenance |
| Fire system                                   | Chiromo campus- New 844 Phy-Chem lab                    | Good       | Needs regular maintenance |
| Nuclear magnetic resonance equipment          | Chiromo campus- New 844 Phy-Chem lab                    | Reasonable | Needs minor repairs       |
| Universal milling machine<br>Year of Man 1970 | Chiromo campus- Physical science bldg metal fabrication | Good       | Needs minor repairs       |
| Surface grinder<br>Year of Man 1970           | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Obsolete                  |
| Lathe machine (No3)                           | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Needs minor repairs       |
| Lathe machine (No1)                           | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Needs minor repairs       |
| Engraving machine                             | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Needs minor repairs       |
| Shaping machine                               | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Needs minor repairs       |
| Tool grinder                                  | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Obsolete                  |
| Pillar grinder                                | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Needs minor repairs       |
| Band saw                                      | Chiromo campus- Physical science bldg metal fabrication | Very poor  | replace                   |
| Shearing machine                              | Chiromo campus- Physical science bldg metal fabrication | Reasonable | Needs serious repairs     |
| Box bender                                    | Chiromo campus- Physical science bldg metal fabrication | Good       | Needs minor repairs       |
| Roller  | Chiromo campus- Physical science bldg sheet metal       | Good       | Needs minor repairs       |

|                       |   |            |                       |
|-----------------------|---|------------|-----------------------|
| Hydraulic press       | Chiromo campus-<br>Physical science bldg<br>metal fabrication | Reasonable | Needs serious repairs |
| Bench drill           | Chiromo campus-<br>Physical science bldg<br>metal fabrication | Reasonable | Needs minor repairs   |
| Sand blast machine    | Chiromo campus-<br>Physical science bldg<br>metal fabrication | Good       | Needs minor repairs   |
| Glass cutting machine | Chiromo campus-<br>Physical science bldg<br>Glass blowing lab | Reasonable | Needs minor repairs   |
| Glass annealing oven  | Chiromo campus-<br>Physical science bldg<br>Glass blowing lab | Good       | Needs minor repairs   |
| Glass blowing torch   | Chiromo campus-<br>Physical science bldg<br>Glass blowing lab | Good       | Needs minor repairs   |
| Glass lathe machine   | Chiromo campus-<br>Physical science bldg<br>Glass blowing lab | Reasonable | Needs minor repairs   |
| Radial arm saw        | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |
| Bench drill           | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |
| Belt sander           | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |
| Surface planer (No2)  | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |
| Band saw              | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |
| Wood lathe (No2)      | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |
| Mortiser              | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |
| Thickenesser          | Chiromo campus-<br>Physical science bldg<br>Wood work lab     | Good       | Needs minor repairs   |

|                                       |   |            |                     |
|---------------------------------------|---|------------|---------------------|
| Circular saw                          | Chiromo campus-<br>Physical science bldg<br>Wood work lab | Very poor  | Replace             |
| Power saw                             | Chiromo campus-<br>Physical science bldg<br>Store         | Reasonable | Needs minor repairs |
| Compressor                            | Chiromo campus-<br>Physical science bldg<br>Store         | Good       | Needs minor repairs |
| Fire extinguisher<br>Year of man 2008 | Chiromo campus-<br>Physical science bldg<br>Store         | Reasonable | Needs minor repairs |
| Fire extinguisher<br>Year of man 2009 | Chiromo campus- Admin<br>offices                          | As New     | As New              |
| Fridge                                | Chiromo campus- Admin<br>Principal's office               | Good       | Needs minor repairs |
| Back up generator<br>Year of man 2005 | Chiromo campus- Admin                                     | Good       | Needs minor repairs |
| Bore hole pump<br>Year of man 2005    | Chiromo campus- Admin                                     | Reasonable | Needs minor repairs |
| Fire system<br>Year of man 2007       | Chiromo campus- New<br>844 bldg                           | Reasonable | Needs minor repairs |
| Alarm system<br>Year of man 2007      | Chiromo campus- New<br>844 bldg                           | As New     | As New              |
| Cooling system<br>Year of man 2009    | Chiromo campus-<br>SCI/ICT                                | As New     | As New              |
| Back up generator<br>Year of man 1990 | Chiromo campus-<br>SCI/ICT                                | Reasonable | Needs minor repairs |
| Alarm system<br>Year of man 2000      | Chiromo campus-<br>SCI/ICT                                | Good       | Needs minor repairs |
| UPS<br>Year of man 2009               | Chiromo campus-<br>SCI/ICT                                | Good       | As New              |

**Table 3.14. College of Education and External Studies Equipment Condition**

| <b>Equipment</b>         | <b>Location</b>             | <b>Condition</b> | <b>Remedial Action</b> |
|--------------------------|-----------------------------|------------------|------------------------|
| Binding Machine          | KIKUYU- Printing<br>Section | Good             | Needs minor repairs    |
| Generator                | Kikuyu Campus               | As New           | As New                 |
| Praktika Machine         | Printing Section            | Very poor        | Replace                |
| Printing<br>machine(2No) | Printing Section            | Good             | Needs minor repairs    |

**Table 3.15. Students Welfare Authority Equipment Condition**

| <b>Equipment</b>        | <b>Location</b>   | <b>Condition</b>       | <b>Remedial Action</b>        |
|-------------------------|-------------------|------------------------|-------------------------------|
| Boclea                  | SWA . CCU Grounds | Very poor              | Replace                       |
| Booster Pump            | SWA               | Very poor              | Replace                       |
| Borehole                | SWA- Mamlaka      | As New                 | As New                        |
| Cold Room               | SWA- CCU Kitchen  | Very poor              | Replace                       |
| Electronic Scale        | SWA- CCU          | Very poor              | Replace                       |
| Elevator                | SWA- CCU          | Very poor              | Needs serious repairs         |
| Fire Fighting Equipment | SWA - Hall        | Very poor              | Replace                       |
| Mechanical Scale        | SWA- CCU          | Poor                   | Improve maintenance standards |
| Potato Peeler           | SWA - Mamlaka     | Very poor              | Replace                       |
| Pump                    | SWA- Prefab       | Needs critical repairs | Improve maintenance standards |
| Welding Machine         | SWA - CCU         | Needs serious repairs  | Replace                       |
| Wood Cutter             | SWA - CCU         | Needs serious repairs  | Replace                       |

**Table 3.16. University of Nairobi Enterprises and Services Equipment Condition**

| <b>Equipment</b>      | <b>Location</b> | <b>Condition</b> | <b>Remedial Action</b> |
|-----------------------|-----------------|------------------|------------------------|
| Air Conditioning Unit | UHS             | Poor             | Needs minor repairs    |
| Power Generator       | UHS             | As New           | As New                 |
| Power Generator No 2  | UHS             | As New           | As New                 |

### ANNEXE 3: ICT EQUIPMENT CONDITION RATING

**Table 3.17 ICT Equipment in Various campuses**

| Location                                    | Equipment                  | No.             | Overall Assessment | Remedial Action                                    |
|---|----------------------------|-----------------|--------------------|--|
| <b>Lower Kabete Ë<br/>Tuition Block</b>     | Computers                  | Between 31 -100 |                    | Needs Preventive Maintenance at least twice a year |
|   | Laptops                    | -               |                    |  |
|   | Computer Printers          | -               |                    |  |
|   | LCDs                       | -               |                    |  |
|   | UPSs                       | -               |                    |  |
|   | Scanners                   | -               |                    |  |
|   | Networking Switches        | -               |                    |  |
|   | Photocopiers               | -               |                    |  |
|   | Servers                    | -               |                    |  |
|   | Valid XP, LINUX & WIN 2000 | Yes             |                    |  |
| <b>Parklands Campus-<br/>Commercial law</b> | Computers                  | Between 31 -100 |                    | Needs Major repairs and/or replacement             |
|   | Laptops                    | -               |                    |  |
|   | Computer Printers          | -               |                    |  |
|   | LCDs                       | -               |                    |  |



|                                |                            |                 |      |  |
|--------------------------------|----------------------------|-----------------|------|--|
|                                | UPS\$                      | -               |      |  |
|                                | Scanners                   | -               |      |  |
|                                | Networking Switches        | -               |      |  |
|                                | Photocopiers               | -               |      |  |
|                                | Servers                    | -               |      |  |
|                                | Valid XP, LINUX & WIN 2000 | Yes             |      |  |
| <b>Main Campus E Library</b>   | Computers                  | Between 31 -100 |      | Needs preventive maintenance at least twice a year |
|                                | Laptops                    | -               |      |  |
|                                | Computer Printers          | Between 6-10    |      |  |
|                                | LCD\$                      | -               |      |  |
|                                | UPS\$                      | Between 11-30   |      |  |
|                                | Scanners                   | Between 1-5     |      |  |
|                                | Networking Switches        | -               |      |  |
|                                | Photocopiers               | -               |      |  |
|                                | Servers                    | Between 1-3     |      |  |
|                                | CCTV installed             | Yes             |      |  |
|                                | Valid XP, LINUX & WIN 2000 | Yes             |      |  |
| <b>Faculty of Arts and IDS</b> | Computers                  | Between 31 -100 | Good | Needs preventive maintenance at least twice a year |
|                                | Laptops                    | -               |      |  |
|                                | Computer Printers          | Between 11-30   |      |  |
|                                | LCD\$                      | -               |      |  |
|                                | UPS\$                      | 31-100          |      |  |
|                                | Scanners                   | Between 1-5     |      |  |
|                                | Networking Switches        | Above 6         |      |  |
|                                | Photocopiers               | -               |      |  |
|                                | Servers                    | -               |      |  |
|                                | Valid XP, LINUX & WIN 2000 | Yes             |      |  |

|                                 |                            |                 |           |  |
|---------------------------------|----------------------------|-----------------|-----------|--|
| <b>Lower Kabete-ICT Section</b> | Computers                  | Between 31 -100 | Very Good | Needs preventive maintenance at least twice a year |
|                                 | Laptops                    | -               |           |  |
|                                 | Computer Printers          | Between 11-30   |           |  |
|                                 | LCDs                       | -               |           |  |
|                                 | UPSs                       | Between 31-100  |           |  |
|                                 | Scanners                   | Between 1-5     |           |  |
|                                 | Networking Switches        | Between 1-3     |           |  |
|                                 | Photocopiers               | -               |           |  |
|                                 | Servers                    | -               |           |  |
|                                 | Valid XP, LINUX & WIN 2000 | Yes             |           |  |
| <b>CAVS Economics</b>           | Computers                  | Between 31 -100 | Good      | Needs preventive maintenance at least twice a year |
|                                 | Laptops                    | Between 1-5     |           |  |
|                                 | Computer Printers          | Between 1-5     |           |  |
|                                 | LCDs                       | Between 1-5     |           |  |
|                                 | UPSs                       | Between 31 -100 |           |  |
|                                 | Scanners                   | Between 1-5     |           |  |
|                                 | Networking Switches        | Between 4-5     |           |  |
|                                 | Photocopiers               | -               |           |  |
|                                 | Servers                    | -               |           |  |
|                                 | Valid XP, LINUX & WIN 2000 | Yes             |           |  |
| <b>CHS -Library</b>             | Computers                  | Between 31 -100 | Good      | Needs preventive maintenance at least twice a year |
|                                 | Laptops                    | Between 1-5     |           |  |
|                                 | Computer Printers          | Between 1-5     |           |  |
|                                 | LCDs                       | Between         |           |  |

|                                    |                            |                 |            |  |
|------------------------------------|----------------------------|-----------------|------------|--|
|                                    |                            | 1-5             |            |  |
|                                    | UPS\$                      | Between 31 -100 |            |  |
|                                    | Scanners                   | Between 1-5     |            |  |
|                                    | Networking Switches        | Between 4-5     |            |  |
|                                    | Photocopiers               | -               |            |  |
|                                    | Servers                    | -               |            |  |
|                                    | Valid XP, LINUX & WIN 2000 | Yes             |            |  |
| <b>Kenya Science-Tuition Block</b> | Computers                  | Between 31 -100 | Good       | Needs Preventive at least twice a year                               |
|                                    | Laptops                    | -               |            |  |
|                                    | Computer Printers          | Between 1-5     |            |  |
|                                    | LCD\$                      | Between 1-5     |            |  |
|                                    | UPS\$                      | Between 31 -100 |            |  |
|                                    | Scanners                   | Between 1-5     |            |  |
|                                    | Networking Switches        | Above 6         |            |  |
|                                    | Photocopiers               | -               |            |  |
|                                    | Servers                    | Between 1-3     |            |  |
|                                    | Valid XP, LINUX & WIN 2000 | Yes             |            |  |
| <b>CAVSE Public Health Dept</b>    | Computers                  | Between 31 -100 | Reasonable | Needs minor repairs and preventive maintenance at least twice a year |
|                                    | Laptops                    | Between 11-30   |            |  |
|                                    | Computer Printers          | Between 11-30   |            |  |
|                                    | LCD\$                      | Between 1-5     |            |  |
|                                    | UPS\$                      | Between 11-30   |            |  |
|                                    | Scanners                   | Between 1-5     |            |  |
|                                    | Networking Switches        | -               |            |  |
|                                    | Photocopiers               | -               |            |  |

|                                   |                            |                 |            |  |
|-----------------------------------|----------------------------|-----------------|------------|--|
|                                   | Servers                    | -               |            |  |
|                                   | Valid XP, LINUX & WIN 2000 | Yes             |            |  |
| <b>CHS School of Medicine</b>     | Computers                  | Between 31 -100 | Good       | Needs minor repairs and preventive maintenance at least twice a year |
|                                   | Laptops                    | -               |            |  |
|                                   | Computer Printers          | Between 11-30   |            |  |
|                                   | LCDs                       | Between 11-30   |            |  |
|                                   | UPSs                       | Between 31 -100 |            |  |
|                                   | Scanners                   | Between 1-5     |            |  |
|                                   | Networking Switches        | Above 6         |            |  |
|                                   | Photocopiers               | -               |            |  |
|                                   | Servers                    | -               |            |  |
|                                   | Valid XP, LINUX & WIN 2000 | Yes             |            |  |
| <b>CHS School of Pharmacy</b>     | Computers                  | Between 31 -100 | Good       | Needs minor repairs and preventive maintenance at least twice a year |
|                                   | Laptops                    | Between 6-10    |            |  |
|                                   | Computer Printers          | Between 11-30   |            |  |
|                                   | LCDs                       | Between 6-10    |            |  |
|                                   | UPSs                       | Between 31 -100 |            |  |
|                                   | Scanners                   | -               |            |  |
|                                   | Networking Switches        | -               |            |  |
|                                   | Photocopiers               | -               |            |  |
|                                   | Servers                    | -               |            |  |
|                                   | Valid XP, LINUX & WIN 2000 | Yes             |            |  |
| <b>Lower Kabete Tuition Block</b> | Computers                  | Between 31 -100 | Reasonable | Preventive Maintenance at least twice a year                         |
|                                   | Laptops                    | -               |            |  |
|                                   | Computer Printers          | Between 1-5     |            |  |

|   |                            |                |      |  |
|---|----------------------------|----------------|------|--|
|   | LCD\$                      | Between 1-5    |      |  |
|   | UPS\$                      | Between 11 -30 |      |  |
|   | Scanners                   | Between 1-5    |      |  |
|   | Networking Switches        | Above 6        |      |  |
|   | Photocopiers               | -              |      |  |
|   | Servers                    | -              |      |  |
|   | Valid XP, LINUX & WIN 2000 | Yes            |      |  |
| <b>Main Campus School of Business Lab.&amp; Offices</b> | Computers                  | Between 11 -30 | Good | Preventive Maintenance at least twice a year |
|   | Laptops                    | -              |      |  |
|   | Computer Printers          | Between 6-10   |      |  |
|   | LCD\$                      | -              |      |  |
|   | UPS\$                      | Between 11 -30 |      |  |
|   | Scanners                   | Between 1-5    |      |  |
|   | Networking Switches        | -              |      |  |
|   | Photocopiers               | -              |      |  |
|   | Servers                    | -              |      |  |
|   | Valid XP, LINUX & WIN 2000 | Yes            |      |  |
| <b>CAVS ELand. Resources</b>                            | Computers                  | Between 11 -30 | Poor | Needs Major repairs and/or replacement       |
|   | Laptops                    | Between 1-5    |      |  |
|   | Computer Printers          | Between 1-5    |      |  |
|   | LCD\$                      | Between 1-5    |      |  |
|   | UPS\$                      | Between 6 -10  |      |  |
|   | Scanners                   | -              |      |  |
|   | Networking Switches        | Between 1-3    |      |  |
|   | Photocopiers               | -              |      |  |
|   | Servers                    | -              |      |  |

|  |                            |              |      |  |
|--|----------------------------|--------------|------|--|
|  | Valid XP, LINUX & WIN 2000 | Yes          |      |  |
| <b>Chiromo Campus Science Building</b> | Computers                  | -            | Best | Preventive Maintenance at least twice a year |
|  | Laptops                    | -            |      |  |
|  | Computer Printers          | Between 1-5  |      |  |
|  | LCDs                       | Between 1-5  |      |  |
|  | UPSs                       | -            |      |  |
|  | Scanners                   | -            |      |  |
|  | Networking Switches        | -            |      |  |
|  | Photocopiers               | -            |      |  |
|  | Servers                    | -            |      |  |
|  | Valid XP, LINUX & WIN 2000 | Yes          |      |  |
| <b>Lower Kabete Library</b>            | Computers                  | Between 1 -5 | Good | Preventive Maintenance at least twice a year |
|  | Laptops                    | -            |      |  |
|  | Computer Printers          | Between 1-5  |      |  |
|  | LCDs                       | -            |      |  |
|  | UPSs                       | Between 1-5  |      |  |
|  | Scanners                   | -            |      |  |
|  | Networking Switches        | -            |      |  |
|  | Photocopiers               | -            |      |  |
|  | Servers                    | -            |      |  |
|  | Valid XP, LINUX & WIN 2000 | Yes          |      |  |
| <b>Moana Research Station</b>          | Computers                  | Between 1-5  | Best | Preventive Maintenance at least twice a year |
|  | Laptops                    | -            |      |  |
|  | Computer Printers          | Between 1-5  |      |  |
|  | LCDs                       | Between 1-5  |      |  |
|  | UPSs                       | -            |      |  |
|  | Scanners                   | -            |      |  |
|  | Networking                 | -            |      |  |

|   |                            |              |            |  |
|---|----------------------------|--------------|------------|--|
|   | Switches                   |              |            |  |
|   | Photocopiers               | -            |            |  |
|   | Servers                    | -            |            |  |
|   | Valid XP, LINUX & WIN 2000 | Yes          |            |  |
| <b>Lower Kabete Ę Old Admin Block</b>   | Computers                  | Between 1-5  | Good       | Preventive Maintenance at least twice a year |
|   | Laptops                    | -            |            |  |
|   | Computer Printers          | Between 1-5  |            |  |
|   | LCD\$                      | -            |            |  |
|   | UPS\$                      | Between 1 -5 |            |  |
|   | Scanners                   | -            |            |  |
|   | Networking Switches        | Between 4-5  |            |  |
|   | Photocopiers               | Between 1-3  |            |  |
|   | Servers                    | -            |            |  |
| Valid XP, LINUX & WIN 2000              | Yes                        |              |            |  |
| <b>Kikuyu-Printing Section</b>          | Computers                  | Between 1-5  | Reasonable | Preventive Maintenance at least twice a year |
|   | Laptops                    | -            |            |  |
|   | Computer Printers          | -            |            |  |
|   | LCD\$                      | -            |            |  |
|   | UPS\$                      | -            |            |  |
|   | Scanners                   | -            |            |  |
|   | Networking Switches        | -            |            |  |
|   | Photocopiers               | -            |            |  |
|   | Printing Machines          | Between 1-3  |            |  |
| Valid XP, LINUX & WIN 2000              | Yes                        |              |            |  |
| <b>Parklands Campus-Admin &amp; SWA</b> | Computers                  | Between 1-5  | Poor       | Needs Major Repair                           |
|   | Laptops                    | -            |            |  |
|   | Computer Printers          | Between 6-10 |            |  |
|   | LCD\$                      | -            |            |  |

|  |                            |     |  |  |
|--|----------------------------|-----|--|--|
|  | UPS                        | -   |  |  |
|  | Scanners                   | -   |  |  |
|  | Networking Switches        | -   |  |  |
|  | Photocopiers               | -   |  |  |
|  | Printing Machines          | -   |  |  |
|  | Valid XP, LINUX & WIN 2000 | Yes |  |  |

### 7. THE MAINTENANCE POLICY COMMITTEE

| <u>Name</u>               |   |          | <u>Date</u>       | <u>Signature</u> |
|---------------------------|---|----------|-------------------|------------------|
| 1. Prof Paul M. Syagga    | - | Chairman | ō ō ō ō ō ō ō ō   | ō ō ō ō ō ō ō    |
| 2. Dr. Sylvester M. Masu  | - | Member   | ō ō ō ō ō ō ō ō . | ō ō ō ō ō ō ō    |
| 3. Mr. Tracisio M. Thuita | - | Member   | ō ō ō ō ō ō ō ō   | ō ō ō ō ō ō ō    |
| 4. Dr. Tom C. Anyamba     | - | Member   | ō ō ō ō ō ō ō ō   | ō ō ō ō ō ō ō    |
| 5. Prof. David N. Mungai  | - | Member   | ō ō ō ō ō ō ō ō . | ō ō ō ō ō ō ō    |
| 6. Ms. A. Yohannes-Mbathi | - | Member   | ō ō ō ō ō ō ō ō   | ō ō ō ō ō ō ō    |



|                               |   |           |                 |             |
|-------------------------------|---|-----------|-----------------|-------------|
| 7. Mr. Joseph M. N. Kanyugo   | - | Member    | õ õ õ õ õ õ õ   | õ õ õ õ õ õ |
| 8. Dr. Eng. Julius Ogola      | - | Member    | õ õ õ õ õ õ õ   | õ õ õ õ õ õ |
| 9. Mr. Joseph M. Mokaya       | - | Member    | õ õ õ õ õ õ õ   | õ õ õ õ õ õ |
| 10. Mr. John Aduol            | - | Member    | õ õ õ õ õ õ õ   | õ õ õ õ õ õ |
| 11. Ms. Elizabeth W. Gachithi | - | Member    | õ õ õ õ õ õ õ   | õ õ õ õ õ õ |
| 12. Mr. Fredrick W. Kachero   | - | Secretary | õ õ õ õ õ õ õ . | õ õ õ õ õ õ |