



**ACCRA
TECHNICAL
UNIVERSITY**

SANITATION GUIDELINES POLICY

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SUMMARY DETAILS TABLE

Version	Version 1.0
Short Description	The Accra Technical University Sanitation Guidelines provides for providing a safe and healthy environment for the University community and for achieving and maintaining compliance with all environmental, health, and safety laws and regulations.
Relevant to	All staff and students of Accra Technical University Clinic.
Issuing Authority (Approved by)	Accra Technical University Governing Council
Responsible Officer	ATU Director of Works and Physical Development
Responsible Office	Accra Technical Directorate of Works and Physical Development
Related Technical University Document	Accra Technical University Statutes, Scheme of Service for Technical Universities
Related Legislation	Technical Universities Act, 2016 (Act 922) as (Amendment) Act, 2018 - Act 974
Keywords	Sanitation, Environment, Waste

1 ENVIRONMENTAL SANITATION GUIDELINES

1.1 Purpose

The purpose of the document is to provide guidelines for providing a safe and healthy environment for the University community and for achieving and maintaining compliance with all environmental, health, and safety laws and regulations.

1.2 Scope

This Environmental Sanitation Guidelines applies to the University Kinbu Campus, the Mpehuasem Campus and Cantonments Estate.

2 POLICY FRAMEWORK AND KEY RESPONSIBILITIES

2.1 University Council

The Council has ultimate responsibility and 'ownership' of the Environmental Sanitation Guidelines. It has oversight responsibility for its implementation within the University by ensuring effective management of good environmental health and sanitation practices.

The Council shall carry out its responsibility by:

- i. Demonstrating strong and active leadership by ensuring that there is visible and active commitment through regular review of the environmental sanitation guidelines.
- ii. Setting the direction for effective environmental sanitation management as an integral part of the academic and administrative decisions.
- iii. Ensuring there is a well-structured team to champion the University's environmental sanitation responsibilities.
- iv. Ensuring there are effective 'downward' and 'upward' communication channels embedded within the management structures.
- v. Taking the lead in ensuring the communication of environmental sanitation duties and benefits throughout the University.
- vi. Ensuring adequate finances, personnel, equipment, materials and other resources are made available so that the requirements of these guidelines and sustainable environmental sanitation practices can be fulfilled.
- vii. Expecting all staff and students participate fully in meeting the core objectives of setting up this guideline for Environmental Sanitation

2.2 The Vice Chancellor

- i. The Vice-Chancellor (VC) has the responsibility for developing, implementing and improving the University's Environmental Sanitation management system.
- ii. The VC has the duty of taking all practicable measures to create an environmentally friendly work environment. These include the following:
 - Providing leadership and direction in matters of Environmental Sanitation and ensuring there is continuous improvement in the Environmental Sanitation performance of the University;

- Ensuring suitable control of Environmental Sanitation management which is integrated into general academic and administrative activities;
- Establishing and achieving overall Environmental Sanitation goals and objectives as part of the strategic plans of the University and its constituent parts; and
- Developing a clear chain of responsibility for Environmental Sanitation matters through normal line management channels.

2.3 Directors, Deans, and Head of Departments

As frontline managers they are expected to implement the University policies related to Environmental Sanitation. They shall achieve this by:

- i. Effective consultation with staff and students, ensuring that they understand the mandatory role each one has to play in order to gain their commitment to achieving excellent Environmental Sanitation service delivery standards.
- ii. Ensuring that Environmental Sanitation is given the appropriate priority while carrying out their regular duties.
- iii. Ensuring necessary information, instruction, training and supervision is provided to all Staff and students to enable them undertake their tasks without risk to their own or other persons.
- iv. Ensuring that sanitation and environmental problems reporting procedures are established and complied with in line with local and University policy.
- v. Ensuring that all departments and units have suitable and sufficient risk assessments and safe systems of work in place for the protection of staff, students, service users, and others that can be affected by our activities.
- vi. Ensuring that staff and students are conversant with the University's Environmental Sanitation policy and associated policies and procedures and that they understand the importance of complying with the requirements.
- vii. Monitoring staff and students and appointed contractors to ensure that they undertake their duties/responsibilities in a proper hygienic manner in line with the University policies.
- viii. Ensuring regular inspections and audits of the University's premises under their responsibility, including operational areas and equipment to ensure a safe teaching and learning environment.

- ix. Liaising and consulting with the Director of Works and Physical Development for the management of the risks involved with related issues e.g. ligature points, water systems, and contractors.
- x. Allocating the necessary human and financial resources to achieve the goals.

2.4 Staff and Students

Every member of staff and/or every student has a responsibility to:

- i. Take reasonable care of their own personal hygiene and other persons who may be affected by their actions or omissions.
- ii. Familiarise themselves with and abide by the Environmental Sanitation policy and all applicable University policies, procedures and guidelines.
- iii. Co-operate with their heads on Environmental Sanitation matters.
- iv. Identify and report to their heads any insanitary conditions that could be injurious to health arising out of work activities.
- v. Report all insanitary conditions to the appropriate authorities.
- vi. Be aware of the University Environmental Sanitation policy and the necessary control measures to prevent diseases.
- vii. Avoid interference in matters relating health and safety.
- viii. Regularly appraise themselves with, the latest information, instructions, and training received.
- ix. Attend the relevant modules of Core Mandatory Training and participate in any further training as identified by heads.

2.5 The Environmental Health and Sanitation Office (Advisors)

The Officer shall be responsible for but not limited to

- i. General supervision and control of Public Health Staff/Sanitary workers in the University.
- ii. Analyze and advise on the planning, design, construction and maintenance of sanitation systems, including waste treatment options.
- iii. Analyze Public Health consequences of various human activities to ensure

sound judgment during inspection.

- iv. Undertake education and compliance activities to assist food and other vendors in meeting their hygienic and legislative requirements.
- v. Inspect workplaces regularly to audit safety and environmental procedures and report findings as appropriate.
- vi. Plan and organise general environmental sanitation activities of the University.
- vii. Create and implement an Environmental Management Plan/Policy.
- viii. Implement and maintain programs and procedures to facilitate a safe environment
- ix. Review, develop and improve the organisation's safety management system, while ensuring that health and safety risks are identified, assessed and managed with appropriate control measures in order to comply with legal and regulatory requirements.
- x. Prepare an annual budget and an annual report indenting of the Environmental Health stores.
- xi. Ensure that the team has effective strategies and plans, with a strong performance management culture.
- xii. Advice the Director and other officers on all aspects relating to the Environmental Health and Sanitation issues.

3 GUIDELINES FOR CLEANING WASHROOMS

3.1 Standards

There shall be a training for all the cleaners on the use of chemicals.

The following standard which is the absolute shall apply whenever applicable. The university community shall therefore work towards it.

At every given time, there shall be a separate washroom for students: ladies, gents as well as separate washroom for staff ladies and gents. Similarly, there shall be a separate washroom facility for male and female physically challenged.

3.1.1 Students

- Ladies: 25 or less to 1 cubicle (minimum 4 cubicles)
- Gents: 50 or less to 1 cubicle (minimum 4 cubicles) For non-hostel facilities
- Ladies: 7 or less to 1 cubicle (minimum 7 cubicles)
- Gents: 10 or less to 1 cubicle (minimum 5 cubicles) For hostel facilities

3.1.2 Staff:

10 staff or less to 1 cubicle (minimum of 2 cubicles – one each for men and women)

3.2 Cleaning Procedures

A clean, well-maintained washroom promotes health and hygiene and reduces the spread of infection and disease.

It is essential that janitorial staff follow consistent washroom cleaning procedures. Not only does this prevent cross contamination, but it also improves efficiency and reduces overall labor time.

3.2.1 Safety Precautions

Before beginning with any cleaning task, cleaning and janitorial staff shall ensure that they fully understand how to use the chemicals and equipment required for the job. It is mandated by Occupational Safety and Health Administration (OSHA) that every employee has a right to know about the possible chemical hazards within their workplace.

- A safety data sheet (SDS) shall be provide the information regarding the chemicals within the building. The SDS shall be read and understood, as well as the product label for every product that you use. Supervisors shall provide information on SDS and shall also help subordinates read and understand each sheet.

- Janitors shall

- o be careful not to use cleaning agents (chemicals) on any surfaces for which they are not intended. Be extra cautious when using acid cleaners. As much as possible avoid mixing different chemicals which could cause serious or fatal injury.

- o Wear the appropriate personal protective equipment (PPE) to protect themselves from exposure to corrosive chemicals. Wear a pair of gloves, a mask and a pair of goggles to prevent chemical splashes from coming into contact with your skin and eyes.

- o Practice universal precautions when cleaning any blood or body fluid spills, or soiled materials that could contain these or other potentially infectious substances.

3.2.2 Preparation

Supervisor shall make sure water is running or available when preparing for washroom cleaning, ensure you assemble all cleaning materials needed for the specified task, such as: soap, dusters, dispenser refills, mops and mop buckets and other proper cleaning equipment.

3.2.3 Daily Cleaning Procedures

The following cleaning procedure shall be followed:

- Always clean from top to bottom.
- Clean from dry to wet.
- Work towards the exit door.
- Every Washroom shall be washed at 3 hours interval every day between 6am and 9pm. The last cleaning for the day shall be at 6pm

3.3 Cleaning Toilets and Urinals Part 1

Toilets and urinals can be tough and unpleasant to clean. By applying the proper disinfectant to the bowls ahead of time, the job of janitorial staff will be less troublesome and will give cleaner results. First flush each unit. This is done to ensure that the unit is free of contamination and determine if it is working properly. Report any damage or malfunctioning units to your supervisor or maintenance department.

- It is good practice to back-flush commodes before cleaning. Do this by inserting the bowl mops (w/c brush) several times into the bowl throat, forcing the water up and over the bowl trap. This eliminates the water in the bowl, allowing more of the surface to be cleaned and less dilution of the cleaner.
- Remove debris and urinal blockages with your gloves on and place in a hygienic containers paper towel while you clean.
- Apply a disinfectant solution to the interior and exterior surfaces of all urinals and toilets.
- Let it stand and move on to dry cleaning.

3.3.1 High Dusting

Practicing the “top to bottom” rule, begin by using a long-handled ceiling brush to remove dust from ceiling corners, wall vents, tops of partitions, door frames, window sills, light fixtures and other high areas that may gather dust. This can be done once or twice a week.

3.3.2 Trash Removal

Empty all trash receptacles and disposal units of sanitary napkins and other items. Remove the contents and replace the liners. Never compress the trash and always be careful of sharp objects that may be sticking out of the liners. Spray the receptacles with disinfectant spray such as Sodium Hypochlorite Solution.

3.3.3 Dispensers:

Soap Dispensers

- Check the soap dispenser and refill when necessary.
- Follow the manufacturer's instructions for opening, filling, and securing each type of soap dispensing unit.
- Clean the exterior of the soap dispensers with a damp cloth and a disinfectant solution. If necessary, remove any buildup around the delivery area. Allow it to air dry.

3.3.4 Paper Towel Dispensers

- Unlock the dispenser and refill the paper towels. When operating or cleaning it, be sure to follow the manufacturer's instruction.
- Replace and add more towels as needed to fill the unit in accordance with the manufacturer's instruction. Do not overfill the dispenser because it makes the towels difficult to pull out. Check to make sure towels dispensed easily.
- Close and lock the dispenser. Make sure it is secure.
- Damp wipe the outside of the towel dispenser or the hand dryer with a disinfectant solution and allow it to air dry.

3.3.5 Toilet Tissue Dispensers

- Unlock the dispensers for the toilet tissue holders. Remove the roll and damp wipe the inside of the holder to remove any paper dust using a disinfectant solution. Allow it to air dry.
- Install a new roll of tissue. Be sure the roll unwinds over the top of the roll and not from underneath. This allows it to be pulled out more easily and avoids unrolling and wasting of the product.
- Close and re-lock the dispenser. Damp wipe the outside of the dispenser with disinfectant solution.

Restock any other dispensing units in the restroom. Damp wipe the units with disinfectant solution. Report any equipment, including dispensers that look damaged or do not work properly, to your supervisor.

3.3.6 Dry Floor Care

Dust mop the floor starting from the farthest corner and working towards the door. Collect the dirt with a dustpan and place it in the proper trash receptacle.

3.3.7 Sinks and Countertops

Clean sinks by first using a paper towel to remove any hair or debris. Spray disinfectant inside of the sink and exterior surfaces including all metal handles, faucets and the plumbing until covered. Allow the product to stand for at least 10 minutes for proper disinfection. Wipe using a clean cloth or sponge.

3.3.8 Mirrors and Glass Surfaces

Clean mirrors and glass surfaces. Spray glass cleaner from the bottom to the top. Using a clean cloth, wipe the surface from the top to the bottom to prevent streaking.

Note: Be careful how you use your damp cloths or sponges. Avoid using the same cloth for cleaning the toilet, the mirrors, and the sink. This reduces the risk of cross-contamination.

3.4. Spot Cleaning

Spot clean with disinfectant solution to remove any stains and dirt from walls and switches. Make sure to spray the cleaner on the cloth or sponge when cleaning light switches or fixtures.

3.5 Cleaning Toilets and Urinals

Now that the disinfectant has had ample contact time, you can continue cleaning the toilets and urinals.

- Clean the inside of the toilet with the bowl mop paying close attention to the underside of the flush rim. This prevents the accumulation of bacteria that can spread disease and create unpleasant odors.
- Flush toilet to rinse the bowl. Use the clean water to rinse your bowl mop.
- Flush toilet again.

- Wipe down the exterior surfaces of the fixture with a clean cloth.
- Damp wipe all the flush handles and all other chrome. Allow the disinfectant to air dry.
- Use an acid bowl cleaner to de-scale the flush rim once a week. Remove water by back-flushing with a bowl mop. Saturate the mop with the cleaner and wet all surfaces thoroughly. Rinse by flushing. Only use the acid bowl cleaner on the interior of the bowl and NEVER on the seat. Acid residue could cause harm to skin.
- For urinals, use a bowl mop and wash the pre-sprayed disinfectant from the top to the bottom.
- Replace the urinal screens.

3.6 Tubs and Showers

- When cleaning tubs and showers, first remove all gross soils.
- Apply a tub and shower disinfectant to the walls and floors of a tiled shower stall. Be sure to read the label for dilution recommendations. Thoroughly wet all surfaces including the door tracks, doors, walls, soap dish, faucets and showerhead.
- Allow approximately ten minutes of contact time. Wipe with a nonabrasive scrub pad or sponge.
- Rinse thoroughly.
- Always use a nonacid disinfectant on fixtures. Acid disinfectants are highly corrosive. Follow manufacturer's recommendations for fiberglass showers.
- Dry all surfaces carefully to prevent slips and falls.

3.7 Final Spot Cleaning

Do final spot cleaning on the places that are most often touched in a restroom. Spray robbing alcohol on the handles of urinals, toilet seats, doors and towel dispensers as a final precaution to reduce cross-contamination.

3.8 Wet Mopping

- Wet mop the floor with a disinfectant solution starting from the farthest corner of the room working toward the exit door. Go along the baseboards first to keep them from getting splashed.
- Apply the solution from the mop bucket moderately with special attention given to toilet areas, urinals and sinks.
- Be sure to change the solution once it becomes visibly diluted or contaminated with soil; or at the very least after every three restrooms regardless of visible contamination.

4 GUIDELINES FOR CLEANING OFFICES AND LECTURE ROOMS

Daily cleaning and maintenance of a building is essential to support its daily operations. Dirty floors, dusty work surfaces, and overflowing trash cans contribute to a poor appearance and create a negative impression on administrators, students, lecturers, and guests.

Building service staff, and other janitorial workers provide an important service that the institution depends upon. Clean facilities protect the health and safety of building occupants, promote productivity, and create a positive impression.

It is highly recommended that buildings institute a routine maintenance program that outlines the specific cleaning tasks required in every area of the facility. While each maintenance program is specifically tailored to the individual facility, all cleaning programs shall follow the general guidelines below:

4.1 Cleaning Guidelines for lecture rooms and offices

- **Clean from top to bottom.** Start by dusting or vacuuming ceiling corners and edges as well as light fixtures. Bring all the dirt and dust to the lowest level.
- **Sweep room thoroughly**
- **Clean from dry to wet.** Begin by dusting surfaces and dry mopping or sweeping before using spray-and-wipe products or wet mopping.
- **Clean from dirtiest to cleanest.** Tackle the worst areas first. Once the dirtiest areas are clean, the remaining cleaning tasks are a snap!
- **Use a pattern when cleaning.** For example, work clockwise around the room when dusting or wiping walls. This ensures you won't miss anything.
- **When mopping, start from the furthest corner and work your way toward the door.**

Do not mop yourself into a corner.

General Rule: Lecture halls shall be swept in the morning and tidying up shall be done after every lecture.

5 GUIDELINES ON CLEANING KITCHENS, CANTEENS, AND CAFETERIA

Kitchens and canteens have a direct impact on staff and students' morale, so it is essential that they be kept clean and well maintained. Dirty kitchens and canteens often contribute to poor morale and a low level of respect for the University. Our canteens double as customer lounges, further necessitating the need for the space to be as clean as possible.

5.1 Kitchen and Canteen Cleaning and Maintenance

Many kitchens, canteens, or lounges are equipped with many or all of the following items: microwave, refrigerator, vending machines, water cooler, and coffee makers. The areas around these appliances and machines are often the messiest parts of the room. You can expect to see food and liquid spills, discarded wrappers, cups, straws, napkins, etc.

In addition to being unsightly, the messy areas of a kitchen or canteens can present a safety hazard. Wet floors are slip hazards, and dirty countertops and food-handling surfaces can be breeding grounds for bacteria, mold, and insects.

It is essential that all facilities with a kitchen, break rooms, or lounge area institute a regular maintenance schedule that requires these areas to be cleaned on a daily basis.

5.2 Four Tips for kitchen cleaning

- Start at the top and work your way down

Begin by dusting ceilings, air conditioning vents, and oven hoods. The goal is to bring any dust and dirt from the highest level down to the floor where you can sweep and mop it away.

- Clean from dry to wet

Begin with dust mopping surfaces and floors, removing dust, dirt, crumbs, and other debris. Next, follow up with spray-and-wipe cleaning and wet mopping to remove residues and spills.

- Don't forget about the inside of appliances

Clean the inside of microwaves, toaster ovens, and refrigerators.

- Work toward the door. Don't clean yourself into a corner! Start at the far end of the room and clean in the direction toward the door.

5.3 Detailed Cleaning Tasks

- Put up appropriate signs
- To clean higher fixtures such as lights or vents and windows, wipe them down with a neutral cleaner such as aerosol cleaners
- Spray and wipe the insides of trash and sanitary napkin receptacles with disinfectant when they become visibly soiled.
- Use a product specifically designed for graffiti removal to remove any graffiti. Be sure to read the label before using the product.
- Cleaning grout on tile floors needs to be done periodically and requires special equipment.

5.4 Cleanup Procedures for Your Equipment

- When finished with all necessary procedures and all surfaces are dry, remove posted signs.
- Wash all equipment thoroughly.
- Properly discard mop bucket solutions when cleaning is complete at the end of the day.
- Hang mops to dry in appropriate places.

5.5 Summary

- Be sure to practice good safety precautions:
- Wear the proper personal protective equipment (PPE).
- Post caution signs before cleaning.
- Review your supply checklist and stock your cart.
- Know your daily procedures and the routine in which to perform them.
- Remember these three rules when cleaning and disinfecting a restroom:
 - o Always clean top to bottom
 - o Clean from dry to wet

o Work towards the exit door

- Know your detail and periodic cleaning procedures and when to perform them.
- Be sure to always clean up and wash your equipment at the end of your shift or at the end of a workday.
- Report any damaged or non-functioning dispensers, fixtures, or equipment to proper personnel.

6 GUIDELINES FOR HOSTEL CLEANING

6.1 Prepping the Restroom

Gather all of the necessary cleaning supplies and load them onto your janitorial cart. All mops and dusters used in this area shall be properly marked to avoid being used in other areas. Make sure the washroom is empty and then post the appropriate caution/safety sign. Move your janitorial cart into the restroom, or for smaller areas, leave it blocking the entrance to the restroom. Leave the door propped open, so potential users can see that you are in there cleaning.

The following instructions are based on the assumption that each restroom will get some sort of care daily. For those restrooms that do not need that kind of upkeep, you can adjust the schedule accordingly.

6.2 Daily Cleaning Procedures

- Visually check the appearance of the restroom. Pick up any debris on the floor, around the sink or toilet/urinal areas.
- Check garbage cans and recycling bins. If they are full or nearly full, remove the trash can liner and replace with a new one.
- Check soap, toilet paper, and paper towel dispensers to make sure they are properly stocked.

6.3 Weekly Cleaning Procedures

- Clean and scrub all interior surfaces of toilets/urinals with a toilet bowl cleaner. With a disinfectant, wipe down all exterior surfaces, including toilet seats.
- Wipe down and disinfect all surfaces, including door handles, light switches, countertops, partitions and dispensers.
- Clean all mirrors with a glass cleaner to remove any fingerprints and marks.
- Use a germicidal/acidic surface cleanser to wipe down the sinks and faucets and handles.
- Dust mop, sweep and wet mop the floors, taking care to keep the mops, mop buckets, and solutions used as bathroom only items. Avoid cross-contamination with other areas of the facility at all costs.

6.4 Monthly Cleaning Procedures

- Dust all out of the way areas, including the tops of doors, shelves, partitions, dispensers, hand dryers and air vents.
- Replace all metered aerosol deodorisers and air fresheners.
- Replace the urinal blocks as necessary.
- Check to make sure all drains are properly draining. If not use a drain cleaner to remove all clogs.

6.5 Clean Up

Remove all trash bags and place in the dumpster. Do not remove the caution/restroom closed signs until all work is finished and all surfaces, including the floors are completely dry. Rinse out and clean the mop buckets, mops, and rags that were used.

7 RESIDENCES

The Environmental and Sanitation Department shall be responsible for:

- Cleaning common areas at the university's residences
- Regular weeding of the staff residence surroundings
- Daily removal and emptying of all storage bins at the front of each block.

8 SANITATION GUIDELINES FOR OUTER PARAMETER (BEHIND THE UNIVERSITY'S WALLS)

- Assign cleaners and sanitary workers to routinely clean and empty waste bins
- Engage with AMA to evacuate illegal hawkers along the university's wall stretch
- Maintain a clean fenced perimeter around the forecourt of the Stores/Office Complex at all times

9 POLICY ON PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR ENVIRONMENTAL SERVICES STAFF

PPEs protect Environment, Health and Sanitation (EHS) workers from getting into direct contact with hazardous substances. It is therefore mandated that the following shall guide the University in its quest to protect EHS staff:

- Management shall provide PPE's for environmental staff at the beginning of every academic year. This shall include but shall not be limited to safety wear such as overcoats, overalls, safety boots, hand gloves etc.
- It is mandatory for all staff including supervisors to wear their respective PPE's before the start of work.
- Management shall not be liable to pay damages to any injured staff as a result of negligence to put on PPE's before the commencement of work.
- Management shall train environmental staff on how to use PPEs and the need to use them

10 WASTE MANAGEMENT

10.1 Solid Waste Management (Waste Segregation Model)

The per capita waste generation rate on campus has increased with the growing student and staff population. This poses a great challenge to the management of solid waste on campus. The source separation of solid waste will be implemented as one of the strategies of managing solid waste on campus.

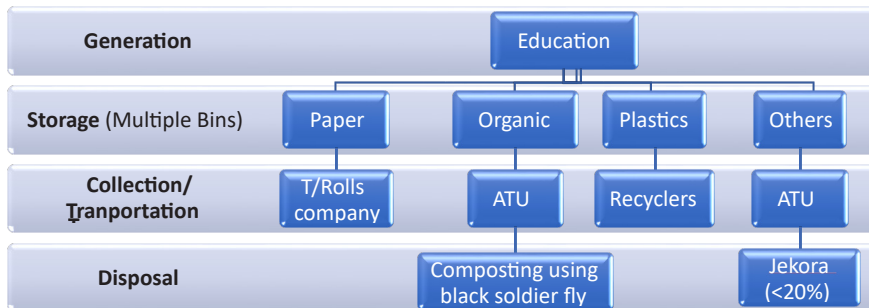


Figure 1 Waste segregation strategy for the ATU Campuses

The institution shall be guided by the MinT Policy (i.e. Material in Transition): Where the waste generated is 'viewed' as a resource through the waste value chain. The pivot for this strategy shall be rested on the 3Rs (Reduce, Reuse and Recycle).

10.1.1 Implementation of the MinT Policy

- Education of Faculty, Staff and Students
- Piloting:

This will be done at the following venues:

- Administration Block
- The HCIM Cafeteria
- ATU Lodge
- SLT Block
- Lecturers' Office Complex

10.1.2 Guidelines for Waste Segregation

Waste Segregation shall be done with the aid of special waste segregation bins. The waste segregation bin units shall consist of four (4) bins. The segregates shall include organic, plastic, papers, glass and cans. The bins shall be colour coded to reflect a specific solid waste characteristic. The segregation shall be implemented at four major levels, namely:

10.1.2.1 Academic Areas:

These comprise the administrative offices, lecture halls/theatres, laboratories, workshops, offices and common areas. Within this zone, the waste bins shall be situated at common areas, e.g. the corridors and open spaces which are easily accessible.

10.1.2.2 Hostels:

Each floor of the hostels shall be provided with four sets of coloured 24L waste bins for each waste characteristic within the waste stream.

10.1.2.3 Residence:

This consists of the block of flats (A, B, C, D and E) and the existing bungalows. Each flat and bungalow shall be supplied with colour coded waste segregation bins. Occupants of the various flats and bungalows shall use the colour coded waste bins and/or liner bags for the segregation of waste. At

the transfer point located at the backyards of the various flats and bungalows, the wastes shall be emptied from liner bags into bins with matching colours.

10.1.2.4 Services Providers:

These consist of the canteen, the services offered within SRC complex and other food joints on campus. This category shall be supplied with 110L colour coded waste bins for the segregation of their solid waste. They shall be surcharged with the cost of the bins provided.

10.1.3 Procedure for Building a Stacked Compost System

Materials: Five used Lorry Tyres labelled A, B, C, D and E, organic household waste
Tools: A sharp pointed kitchen Knife, Shovel and Mattock

1. Get two sets of five (5) stacks of used lorry tyres and wash thoroughly
2. Place the biggest (base) tyre at the place to build the stack and trace the inner and outer circles
3. Dig a hole of depth of 2 feet / 60 centimeters of the inner circle with shovel and mattock
4. Cut one side wall of all the tyres with the sharp pointed knife to prevent water from collecting and breeding mosquitoes.
5. Position the biggest (base) tyre directly over the dug hole.
6. Stack the rest of the tyres on top of each other except the last (5th) one.
7. Cut small holes (3 or 4) on top of the 5th tyre before putting it on to allow the Black Soldier fly get into the system and lay their eggs

10.1.4 Composter Process

1. Start adding the kitchen waste to the composter (Tyre A)
2. When the Tyre A is $\frac{3}{4}$ full, switch the Tyres A and B. And start adding the materials in Tyre B which is now at the top.
3. When the Tyre B gets filled $\frac{3}{4}$ the ingredients in Tyre A has shrunken.
4. You can again switch the Tyres A and B
5. When the Tyre B gets almost filled $\frac{3}{4}$, empty it to Tyre C

6. The final contents of Tyre C starts shrinking and so more materials can be added from the Tyre B to Tyre C.
7. When Tyre C gets filled 3/4 empty the Tyre C before starting to fill the Tyre C again.
8. At this point the contents of Tyre C has decomposed completely.
9. Continue the process until you get to Tyre E and Tyre E gets filled
10. Sieve the contents of Tyre E until a good non-smelling manure (compost) is obtained.
11. The larger pieces that are left after sieving can be added to the Tyre at the top for further decomposing.
12. Keep the compost little damp by sprinkling water in the upper Tyre occasionally. The whole process takes around 90 days.

11 THE LIQUID WASTE MANAGEMENT SYSTEM (THE BIO-SYSTEM APPROACH)

11.1 Kinbu Campus

There are two systems operating on the Kinbu Campus: a centralised system and a non-centralised system. The centralised system connects the university's sewerage system to the city's main sewer system. This serves the southern part of the university campus whilst the northern part is served by septic tanks that are emptied periodically whilst the main septic tank behind Flat 'D' is eventually pumped in the city's main sewer system.



Figure 2 Map showing the Liquid Waste Management System at the Kinbu Campus

11.1.1 Southern Part

The southern part of the university campus comprises of the academic area, the administration area and the students' residence.

11.1.2 Wastewater System

The wastewater from the following blocks in the southern part enters into the city's main sewerage system through the centralised system. They include the following:

- Main Administration block
- Science block
- B.Tech. block
- K block
- N block
- Auditorium
- Building Department block
- Mechanical block
- Carpentry block
- Students' Hostel
- Amphitheater
- Fashion block
- IT Block
- Lecturers' offices complex

All the generated black water from these facilities enters into the city's main sewer system. All the grey and white water enters the open culverts and end up in the city's drainage system, with the exception of the wastewater from the HCIM Kitchen (which is connected to the septic chambers).

11.1.3 Northern Part

The northern part includes the staff residential area i.e. the area occupied by the

- Old staff bungalows (Flats C & E)

- Two Bedroom flats (A)
- Three Bedroom flats (B)
- One Bedroom flats (D)
- New Stores Complex and the
- Demonstration block/ ATU Lodge and
- Security posts
- Cloakroom for cleaners
- Former Rectors' bungalow

11.1.4 Wastewater Systems

The Northern part is served by five (5) septic tanks of various sizes. The black water from these facilities goes into these five septic tanks, whilst the grey and white water enter the open culverts and flow out to join the city's drainage system.

In the northern part, the existing drainage systems are able to manage grey and white water effectively. However, managing the black water has not been effective. The existing septic tanks are inadequate and overburdened, this results in frequent pumping into the Accra Central Sewer. Various options that shall be considered to help address the situation are:

- Construct more septic tanks to proportionally distribute the load.
- Construct small bore sewer which shall collect the overflow from the existing septic tanks and connect this to the city's main sewage system through the southern part.
- Construct a modernised Pump Station to effectively lift and empty sewage into the Central Sewage System.
- Construct a Biogas digester for the northern part

11.2 Mpehuasem Campus

11.2.1 Liquid waste management

The existing wastewater treatment installed at the site comprise biofil digester boxes near the toilet facilities, the soil water polishing garden and final dis-

posal; the latter system not readily noticeable. Liquid waste systems would be by biogas digester and biofil systems, isolated for each building and the final treatment and disposal set up for clusters of nearby facilities. A cluster of buildings will be zoned to a central sewage system for treatment and final disposal. This concept will reduce the volume of waste coming from lavatories and bathrooms. The treated effluent will be used for watering gardens.

12 DISINFECTION AND DISINFESTATION

The activities within any space attracts various forms of micro and macro organisms of public health importance. As such, fumigation shall be done following the underlisted guidelines to control or eradicate microorganisms, rodents, insects and arachnids.

- i. Fumigation of the hostels and canteens after each semester
- ii. Comprehensive pest control annually
- iii. Fumigation of lecture halls, offices, laboratory, kitchens and residences yearly
- iv. Flushing of various drains and sewerage systems twice a year (January and June)

13 CLINIC SANITATION

The clinic shall have a site specific cleaning schedule that meets (or exceeds) the prescribed minimum standard. This would ensure that an appropriate level of cleanliness is maintained at the clinic and elements are not inadvertently missed.

The content of the site-specific cleaning schedule shall clearly identify

- Risk status of all functional areas.
- Cleaning frequency.
- Cleaning method.
- Responsible person (i.e. cleaners, nurses, ward assistants, etc.).

The cleaning schedule (or equivalent) shall be positioned in an area that is regularly and easily accessible, or alternatively, individual sections of the schedule are to be placed in the area concerned. The document shall be regularly reviewed and where necessary adjustment made.

In the event that external cleaning contractors are engaged to conduct the cleaning of a healthcare facility, the site-specific cleaning schedule shall form a part of the contract specification and amendments shall be made when necessary.

NB: Refer to the general guidelines on cleaning and waste management

14 GARDENING AND HORTICULTURAL SERVICES

Gardening and maintenance of lawns and ornamental plant/trees helps to keep the aesthetic and serenity of the environment. The following guidelines shall be followed to achieve optimum results:

- Examine plants carefully before buying. Good roots.
- Use fully composted yard waste.
- Keep an eye on your bugs.
- Clean up in the fall.
- Apply the correct fertiliser.
- Plant disease-resistant varieties.
- Prune damaged limbs at the right time.
- Choose and site plants appropriately.

14.1 Watering

- Keep flowering beds evenly moist. Water just 1-2 times per week.
- Water plants in the evening or early in the morning, when the soil is cooler, as less will evaporate than during the heat of the day.
- Avoid watering leaves or plant heads to avoid mould formation, and water gently to avoid damage.
- A water control system can regulate the amount of moisture in the soil so can let more or less through depending on how the soil feels.

14.2 Lawn

- Protect the lawns from hot weather – temperatures of up to 26°C will promote growth but anything above 30°C will stunt growth. If the temperature rises, avoid cutting the grass too short and, instead, leave it standing at about five centimeters, which will protect from the sun and prevent the soil from drying out.
- The optimum time to water the grass is 4-8am; a water computer control system shall be used to water the garden during these unsociable hours.
- When watering the lawn, use 10-15 liters of water per square meter as a guide and note that over-watering can lead to mould formation.

14.3 Weeds

- To prevent the growth of weeds, plant beds densely to minimise the space available for weeds to develop.
- The use of mulch prevents weed seeds from sprouting.
- If attacking existing weeds, remove the source. Get to the roots by using a weeding trowel.

15 GUTTERS AND STORM DRAIN CLEANING

The storm drains and gutters shall always be free-flowing: devoid of silt, garbage or other waste materials. They shall be maintained in a state that to easily receive storm water and wastewater without impediments. As much as possible, all storm drains and gutters shall be covered and small portions left to receive wastewater and storm water.

15.1 The following tools shall be used for cleaning drains and gutters

- Double-palm rubber gloves (in addition to other PPEs)
- Hard bristle long scrub brush
- Wheelbarrow
- Spade and shovel

15.2 Steps for cleaning drains

- Remove silt using shovel/spade into wheelbarrow.
- Remove all solid waste materials.
- Apply detergents such as Sodium Hypochlorite (Akashaa) for close to 10 minutes.
- Scrub drains using the scrubbing brush to remove algae.
- Cleanse drain with clean water.

16 SUPERVISIONS OF THE ENVIRONMENT/ SANITATION DEPARTMENT

The supervision of service units shall follow the structure below:

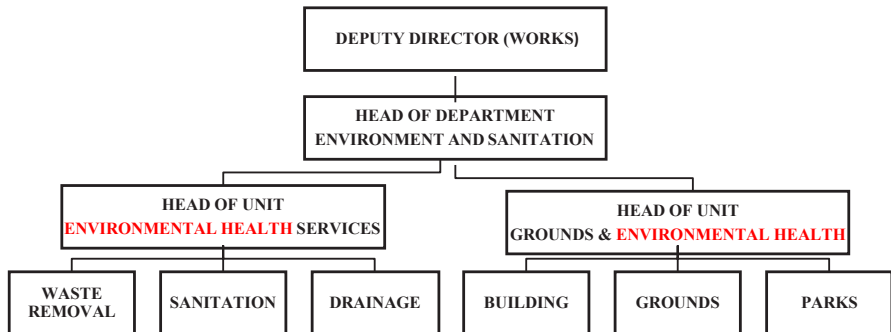


Figure 3 Organogram of service units under the Directorate of Works and Physical Development

A standardised reporting format (template) shall be used for the training and supervision of staff assigned to each category within the zones (Appendix). Supervisors shall be divided and shall run shifts, some in the morning and others in the afternoon. There shall be roll calls for cleaners and sanitary workers every morning.

17 WATER SUPPLY

Apart from water supply from the Ghana Water Company, boreholes would be used as alternate sources of water to improve water supply especially for the washrooms.

18 MPEHUASEM CAMPUS

The Mpehuasem campus has similar facilities compared to the Main Accra City Campus. Hence these guidelines shall be applicable to the maintenance of the sanitation standards of the said campus facilities.

19 SANITATION PROMOTION

There shall be sanitation education and promotion strategies to achieve total sanitation on our various campuses.

19.1 Sanitation Day

The University shall adopt and commemorate a yearly Sanitation Day during the UN Annual World Toilet (Sanitation) Day.

APPENDIX
ACCRA TECHNICAL UNIVERSITY
(ENVIRONMENT/SANITATION DEPARTMENT)
COMPLAINTS & INQUIRIES FORM



- Please fill and submit the completed form.
- The Environmental/Sanitation Department staff shall investigate the complaint and remedy the issues raised or refer it to the appropriate quarters for redress.
- You may be contacted for additional information.

INFORMATION

Complainant

Date

Phone Number *

Email Address

Office Location *

Details of Complaint

Specific Directions / Location*

Complaint / Inquiry *

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Submitted by.....

Submitted To:

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Public Affairs Directorate

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