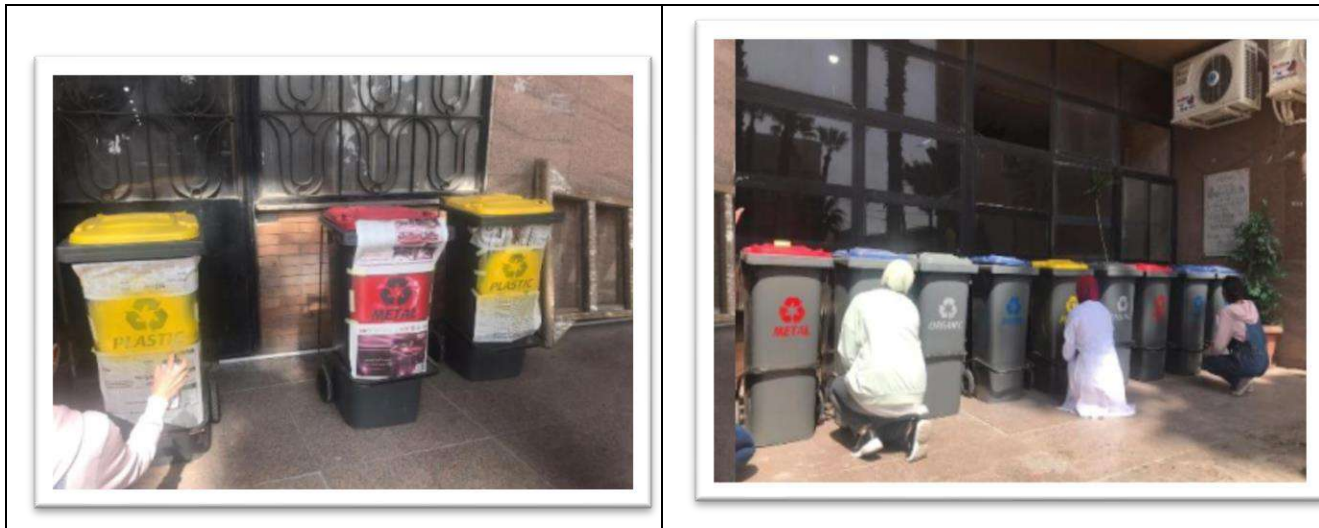


Template for Evidence(s) UI GreenMetric Questionnaire

University : Alexandria University
 Country : Egypt
 Web Address : <https://alexu.edu.eg/index.php/en/>

[3] Waste (WS)

[3.1] 3R (Reduce, Reuse and Recycle) Program for University Waste



Recycling Program for University Waste (Alexandria University, Egypt)



Program for separation of Paper (blue), Plastic (yellow), aluminum cans and glass (green) and organic waste (red) in Campus (Alexandria University, Egypt)



Recycling of plastic waste at the Faculty of Science (Alexandria University, Egypt)



Leaves and organic waste were treated for the vermi-compost to produce organic fertilizers to use in the Campus gardens (Alexandria University).



The Faculty of Agriculture recycles 100% of its organic waste (Alexandria University).



Waste reception hall in Nahdet Misr company for waste collection in Alexandria



Manual sorting hall in Nahdet Misr company for waste collection in Alexandria



Organic matter separation unit in Nahdet Misr company for wastes collection in Alexandria



Mixed plastic collected by Nahdet Misr company for wastes collection in Alexandria



Cans waste collected by Nahdet Misr company for wastes collection in Alexandria



Paper and carton baler in Nahdet Misr company for wastes collection in Alexandria



Cans press in Nahdet Misr company for wastes collection in Alexandria



Recycling Program for both materials and equipment with metals and derivatives (Alexandria University, Egypt)



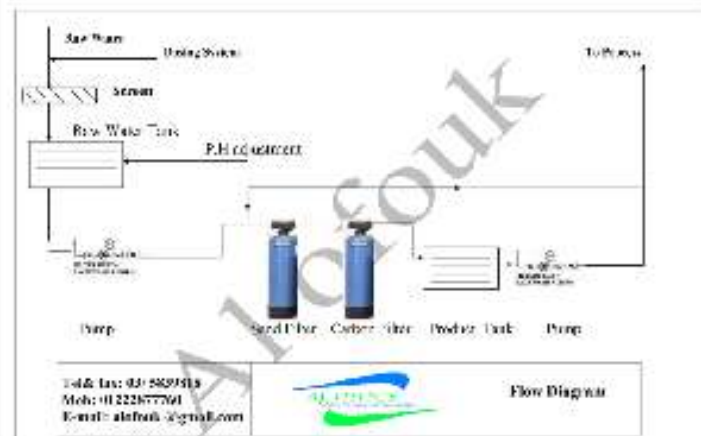
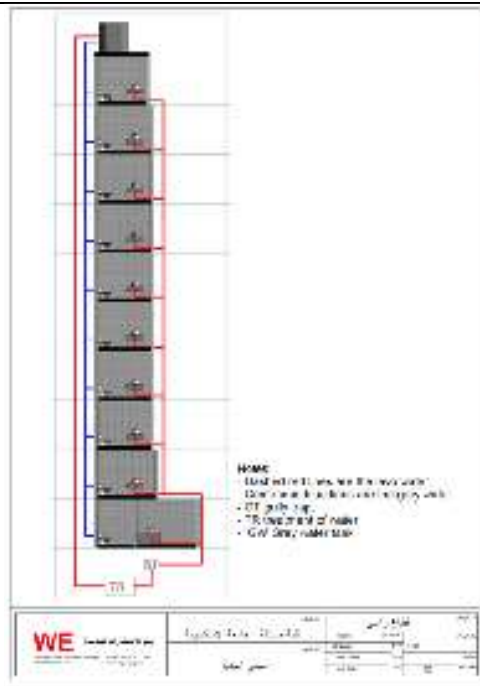
The biohazards and medical hazards, and toxic chemical compounds are handled by Alexandria Governorate Hazardous Waste Management (NASERIA), Alexandria University, Egypt



The water sewage of the Aquaculture of the Faculty of Agriculture (Alexandria University, Egypt)
 The irrigated water supplied to the fish farm at the Agriculture Experimental Research Station of the Faculty of Agriculture is recycled to irrigate the crops, vegetables, and fruits of the land farm.



The sewage water will be treated and reused in the irrigation of green areas in the project (Alexandria University)



Gray water recycling system organized by Faculty of Pharmacy (Alexandria University, Egypt)



Second treatment of Alexandria University Sewage by Alexandria Sanitation Company



Reclaiming 800 thousand acres in the new delta using treated water from sewage

Description:

Alexandria University developed the initiative of "separating and recycling waste", which aims to protect the environment, maintain the cleanliness of colleges and develop environmental awareness within the framework of the concepts of green economy and sustainable development to achieve the vision of Egypt 2030.

Alexandria University Program for Waste Recycling

- 1- The University applied a strategy in all its faculties to segregate the waste into special containers for plastic, papers, glass, and metal objects.
- 2- The University set an initiative for waste recycling in all faculties with a set of labeled containers for waste segregation distributes in each faculty.

3- The University set initiative for increasing the awareness about Purchase Recycled Products: It is important to buy products made from recycled materials to strengthen the market for recyclables.

4- The University developed an initiative with the governorate (Alexandria Youth alliance) to participate with us in waste management initiative.

5- The University has a contract with Nahdet-Misr Company (the official company in the governorate for waste disposal) for collection and recycling.

6- The University is trying to develop an initiative as a student project with Titan® Company for manufacturing of MDF sectors using university collected waste for maximal benefit from this waste.

7- University students at the Faculty of Science initiated a student project for plastic recycling.

Our *recycling program* aims to recycle waste by separating it from the source into:

- Organic waste and food residues.
- Plastic waste and plastic bags .
- Mineral waste and carbonated water cans.
- Paper waste
- Electronic waste
- Toxic waste

This allows the recycling and utilization of as much of the waste as possible instead of disposing of it in landfills, which will eventually lead to its burning and the consequent pollution of the environment and the increase in emissions of greenhouse gases. Our university promotes maintaining the campus environment in clean condition using high quality non-toxic detergents and cleaning materials.

Alexandria University Program for Treatment of Organic Waste

- Separation of Paper in blue containers, Plastic in yellow containers, aluminum cans and glass in green containers and organic waste in red containers in Campus (Alexandria University, Egypt).
- The separated organic waste is mainly food waste, manure, green waste arises from landscaping consists of leaves green plants garden trimmings and others, biodegradable plastic and non hazardous wood waste.
- The Faculty of Agriculture recycles 100% of its organic waste through the following procedure:
 - Utilization of the treated agricultural byproducts in farm animals feeding.
 - Utilization of the treated agricultural byproducts for the vermi-compost to produce organic fertilizers.
 - Utilization of the treated agricultural byproducts through a special insect (black soldier) to produce organic fertilizers and protein sources.
 - Mass production of active Biochar form agricultural waste to remove any water impurities or pesticides residues.

- The organic waste in Alexandria University is handled according to the contract with Nahdet Misr company. All organic waste is collected in organic waste containers. Then the company collects these waste bags and deliver it to a waste treatment facility for processing.
- In addition, the University students at the Faculty of Science initiated a student project for organic waste recycling. Leaves and organic waste were treated for the vermi-compost to produce organic fertilizers to use in the Campus gardens (Alexandria University).
- Approximately in year 2022, **229 tons of waste per year** were collected at the level of university buildings with Nahdet Misr company and separated into organic waste and inorganic waste. **Organic waste constitutes about 55% of the total waste** collected from the campus where 100% were recycled to produce organic compost.
- Managing organic waste involves a range of activities aimed at reducing its negative environmental impact while extracting its potential value to turn organic waste into nutrient-rich soil. The process involves piling up organic waste and allowing it to decompose under controlled conditions. The preparation process takes place in 45 to 60 days through stirring, purification, evaporation and filtration to obtain 58 tons (25%) organic fertilizer.
- The types of fertilizers are produced after treatment of the organic waste by Nahdet Misr company:
 - 14 mm fine organic fertilizers for vegetables.
 - 25 mm organic fertilizers are used as tree fertilizer.
 - 40 mm organic fertilizers are used as fertilizer for new cultivated areas.
 - All previous types are suitable for desert lands.

The University Strategy for Treatment of Inorganic Waste

1. In general, the inorganic waste in the University is divided into two types including:
 - **Non-medical waste:**

Products which are collected and stored in a far place in the faculties which are then removed to a general dump for recycling, examples: papers, plastics, aluminium and glasses.

Heavy metal: Heavy metal waste consists of both materials and equipment with metals and derivatives, examples: Batteries, amalgam, broken mercury thermometers.
 - **Medical waste:**

Medical waste consists of several different subcategories that should all be dealt with in the same way:

Potential infectious waste includes all waste items that are contaminated with or suspected of being contaminated with body fluids.

Examples include: Blood and blood products, used catheters and gloves.
2. Approximately **187 tons of waste per year** were collected at the level of university buildings with Nahdet Misr company and separated into organic waste and inorganic waste. **Inorganic waste constitutes about 45% of the total waste** collected from the campus where 70% were recycled while the rest 30% were transported to Alexandria Governorate Hazardous Waste Management (NASERIA) for their disposal.

3. Inorganic Wastes are collected in separate containers labelled for inorganic waste. The garbage bags are collected daily by Nahdet Misr company for processing.
4. Batteries and other E-wastes are collected separately inside Alexandria University Campus and are delivered for special treatment by Nahdet Misr company. The E-Material are never trashed into a regular trash.
5. The University follows the Egyptian laws associated with disposal of hard materials waste No. (6) for the year 2009 and No. (9) for the year 1982 concerning with environment protection. Alexandria University has a yearly contract with Alexandria Governorate Hazardous Waste Management (NASERIA) for the disposal of Inorganic Waste.
6. By Nahdet Misr company, 10% of the sorted items in the form of paper, plastic, aluminium and glass are recycled, 60% of the collected inorganic waste are recycled in the form of alternative fuel (RDF), which is used in cement factories instead of diesel while the rest 30% are transported to Alexandria Governorate Hazardous Waste Management (NASERIA) to be buried in landfills.

Alexandria University Program to Reduce the Use of Paper and Plastic in Campus

Program 1: Development of electronic archiving system; the university faculties and the main campus are moving toward the electronic archiving system to reduce paper consumption.

Program 2: University decrees to reduce the use of paper in the campus:

- 2.1: The president decree to use the e-mails for communications inside the campus and between the university main campus and all the other campuses.
- 2.2: In the situations, the university or any of its faculties need to print the official documents; this has to be on recycled paper (2 faces copy).
- 2.3: The University formulated a community for administrative reform to minimize the administrative processes and decrease the use of papers except in who are relevant to financial process.

Program 3: Digital transformation toward electronic exams to reduce paper consumption.

Program 4: Digital transformation toward electronic course to reduce paper consumption and books printing.

Program 5: Electronic administration of student courses by about 50% instead of written administration to reduce paper consumption.

Alexandria University Strategy for Disposal of Toxic Waste

1. The biohazards, medical hazards, and toxic chemical compounds are handled by a **special contract** with **Alexandria Governorate Hazardous Waste Management (NASERIA)**, which process these wastes according to the Egyptian law number 6 for year 2009 and low number 9 for year 1982. (attached Contract copy).
 - Medical waste:
Medical waste consists of several different subcategories that should all be dealt with in the same way:
Potential infectious waste includes all waste items that are contaminated with or suspected of being contaminated with body fluids.

Examples include: Blood, blood products, used catheters and gloves.

2. Batteries and other E-wastes are collected separately inside Alexandria University Campus and are delivered for special treatment by Nahdet Misr company. The E-Material are never trashed into a regular trash.

Approximately **2.190 tons of toxic waste in year 2022**, which consist of 100% toxic waste such as biohazards, medical hazards, and toxic chemical compounds of the university buildings are transported to Alexandria Governorate Hazardous Waste Management (NASERIA) to be buried in landfills.

Recycling of Solid and Electronic Waste in the Faculties and Institutes of Alexandria University

According to the decision of Alexandria University to transfer all solid waste to institutes, colleges, hospitals and university cities of the University at the Agricultural Research and Experiments Station in Abis as a central storehouse for the collection of iron priests (Wood - Iron - Alumetal - Computers - Projectors - Photocopiers - Printers - Fire Extinguishers - Doors - windows - wires, lighting poles, electric panels.....etc.), which are considered valuable solid waste worth recycling.

Recycling of solid waste is a good investment project, and with the increase of environmental awareness worldwide, the demand of recycled materials will rise. Alexandria University can save production and energy costs and reduce the negative impacts that the extraction and processing of virgin materials has on the environment.

Recycling old devices saves energy. It also means that fewer raw materials need to be drawn from nature to create new devices. Reusing old devices prevents e-waste by keeping it out of landfills.

The environmental aspect: The process of recycling solid and electronic waste mainly contributes to reducing the percentage of pollution of all kinds, by reducing the accumulation of waste, which contribute greatly in pollution of the environment due to the release of polluting gases and toxic elements in the air, water, and land. The process of recycling solid and electronic waste contributes in reducing the impact of human activity on the planet Earth.

Economic aspect: The process of recycling solid and electronic waste plays an important role in the reduction of economic expenditures, helping countries to meet the challenges related to the high prices of raw materials such as oil and coal. Recycling reduces the reliance on the export of the primary resources of many industries, thus reducing the cost of production. Which result in lower bill of taxes, customs duties, insurance premiums, transportation. On the other hand, the recycling process helps in reducing the consumption of natural raw materials used in different industries. Accordingly, the Energy consumption for manufacturing and production processes will be reduced.

The treatment Program

- A specialized committee is selected including a member from the Engineering Department, according to the devices or tools under investigation.
- In case the devices are not useful, the committee recommends that the items will be transferred to the Agricultural Research and Experiments Station in Abis.

- Recycling warehouses are divided into sections according to the type of materials being recycled, for example: Calculators, printers, wood, Aluminum, etc
- Working teams are selected from the university faculties' maintenance units to benefit from these solid and electronic waste.

Alexandria University Program for Sewage Disposal

- Providing a sewage treatment plant at the university to make it suitable for irrigating green areas and gardens inside the university campus.
- The irrigated water supplied to the fish farm at the Agriculture Experimental Research Station of the Faculty of Agriculture is recycled to irrigate the crops, vegetables, and fruits of the land farm. The recycled water is rich with natural fertilizers and enhances the crops production.
- In addition, the water recycling in Fish Aquaculture of the Faculty of Agriculture, Alexandria University: The water sewage of the Aquaculture of the Faculty of Agriculture, Alexandria University which consist of eight ponds (one acre and quarter/each) in Abis region. Alexandria University used the recycled water for crops culturing in the adjacent agriculture research center in Abis.
- The use of biochar produced from Agricultural waste and waste Forests in residual removal chlorpyrifos pesticide Imidacloprid is from water agricultural drainage. Cooperation project between the Egyptian Academy of Research Science and Technology and the Czech Academy of Sciences.
- The sewage water will be treated and reused in the irrigation of green areas in Alexandria National University.
- Faculty of Pharmacy is seeking to implement a grey water (wastewater) recycling system that depends on reusing wastewater from sewage basins only (without using wastewater from laboratory basins) by repumping it into the flushing bins in the toilets after work. Filtration and primary treatment. The grey water recycling initiative has a significant impact on rationalizing water use.

An amount of water of 967,694.74 is consumed by all colleges and institutes affiliated with the Alexandria University, of which the amount of sewage is 870,925,266 m³, which is lifted through a group of lifting stations to be treated through treatment stations affiliated with the Alexandria Sanitation Company.

1. Secondary biological treatment, where solid waste is separated from liquid waste.
2. **Treated water:** As for the water resulting from first treatment, it is reused within the New Delta Project (the value of the reused water for Alexandria University represents 870,925.266 m³).
3. The Tertiary treatment for use in land reclamation with a design capacity of 7.3 million m³, include 1.7 million cubic meters of treated wastewater form the secondary treatment.

Elements of Green Building Implementation as Reflected in all new construction and renovation policies in the new buildings in Abis campus

- The area of the project is 160 acres, a general site for educational buildings, and 120 acres are complementary activities. The percentage of green areas and lake is about 52% in addition to 25% streets and lanes.
- Water-saving plots are used, which will reduce water consumption by about 30%. The sewage water will be treated and reused in the irrigation of green areas in the project.
- Rainwater is collected in the main lake and used for irrigation.
- The use of plants with few water-rationed plants to reduce irrigation needs in addition to absorbing quantities of rainwater to reduce the severity of rain spells.

Green Cycle Project in Faculty of Pharmacy – Alexandria University

The Faculty is advancing the “Green Circle” project, which is a non-profit project that seeks to keep the environment clean and green in a sustainable way by separating waste for recycling and establishing charitable markets to benefit from used clothes. Also, the faculty is seriously seeking to implement a grey water (wastewater) recycling system that depends on reusing wastewater from sewage basins only (without using wastewater from laboratory basins) by re-pumping it into the flushing bins in the toilets after work. Filtration and primary treatment.

Additional evidence link: Maintenance Unit for lab apparatus and electronics:

https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5912&catid=21&lang=ar-AA

Link for Sustainable Development: <https://alexu.edu.eg/index.php/en/sustainable-development>

<https://alexu.edu.eg/index.php/en/2015-11-24-10-38-07/ranking?id=6011>

<http://sustainability.alexu.edu.eg/>

Link for Green University:

https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5932&catid=21&lang=ar-AA

Link for Green Cycle Project: <https://fb.watch/mzqhBHazV4/?mibextid=j8LeHn>

Additional evidence link: <https://www.alexu.edu.eg/index.php/en/community-development-and-environmental-affairs/6435-alexandria-university-initiative-to-separate-and-recycle-waste>



VICE PRESIDENT

Community Service & Environment Development

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Sincerely,

Prof.

Community Service & Environment Development
Alexandria University

