WASTE MANAGEMENT FACILITIES REPORT

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QUANTUM UNIVERSITY PRACTICES: NURTURING SUSTAINABLE WASTE MANAGEMENT

QUANTUM UNIVERSITY, COMMITTED TO CUTTING-EDGE RESEARCH AND SUSTAINABLE PRACTICES, EXTENDS ITS DEDICATION TO INNOVATION INTO WASTE MANAGEMENT. IN ALIGNMENT WITH GLOBAL ENVIRONMENTAL GOALS, THE UNIVERSITY HAS IMPLEMENTED A COMPREHENSIVE WASTE MANAGEMENT FRAMEWORK THAT ADDRESSES DIVERSE CATEGORIES, REFLECTING ITS COMMITMENT TO ENVIRONMENTAL RESPONSIBILITY.

THE SOLID WASTE MANAGEMENT SYSTEM AT QUANTUM UNIVERSITY INTEGRATES WASTE SEGREGATION, RECYCLING INITIATIVES, AND ECO-FRIENDLY DISPOSAL METHODS. THIS HOLISTIC APPROACH ENSURES THAT NON-LIQUID WASTE IS HANDLED WITH PRECISION, REDUCING ITS IMPACT ON THE ENVIRONMENT. THE UNIVERSITY'S LIQUID WASTE MANAGEMENT STRATEGIES PRIORITIZE THE TREATMENT AND RESPONSIBLE HANDLING OF SEWAGE AND INDUSTRIAL EFFLUENTS, INCORPORATING ADVANCED PROCESSES SUCH AS SEDIMENTATION AND BIOLOGICAL TREATMENT.

BIOMEDICAL WASTE MANAGEMENT PRACTICES AT QUANTUM UNIVERSITY EMPHASIZE THE SECURE DISPOSAL OF MEDICAL WASTE, SHOWCASING A COMMITMENT TO PUBLIC HEALTH AND ENVIRONMENTAL SAFETY. SIMULTANEOUSLY, THE UNIVERSITY'S INITIATIVES IN E-WASTE MANAGEMENT FOCUS ON THE RECYCLING AND PROPER DISPOSAL OF ELECTRONIC WASTE, ALIGNING WITH ITS ETHOS OF RESPONSIBLE RESOURCE USAGE.

QUANTUM UNIVERSITY CHAMPIONS WASTE RECYCLING SYSTEMS TO CLOSE THE LOOP ON MATERIAL USAGE, PROMOTING CIRCULAR ECONOMY PRINCIPLES AND REDUCING THE DEMAND FOR NEW RESOURCES. ADDITIONALLY, STRINGENT PRACTICES IN HAZARDOUS CHEMICALS AND RADIOACTIVE WASTE MANAGEMENT UNDERSCORE THE INSTITUTION'S COMMITMENT TO MAINTAINING A SAFE AND SUSTAINABLE ENVIRONMENT.

IN EMBRACING THESE WASTE MANAGEMENT PRACTICES, QUANTUM UNIVERSITY NOT ONLY CONTRIBUTES TO A CLEANER CAMPUS BUT ALSO SETS A COMMENDABLE EXAMPLE FOR ACADEMIC INSTITUTIONS GLOBALLY. THROUGH ITS HOLISTIC APPROACH, THE UNIVERSITY ALIGNS ITS MISSION WITH BROADER ENVIRONMENTAL GOALS, FOSTERING A CULTURE OF RESPONSIBILITY AND INNOVATION IN WASTE MANAGEMENT.

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SOLID WASTE MANAGEMENT

The waste management practices at the University are commendable, showcasing a commitment to sustainability and environmental responsibility. With an average daily generation of 250 kg of solid waste, the institution has implemented a systematic approach to address different waste categories.

Approximately 70 kg of recyclable solid waste is efficiently managed by selling it in the market, contributing not only to waste reduction but also potentially generating revenue. The emphasis on recycling aligns with global efforts to minimize the environmental impact of waste.

The 80 kg of compostable solid waste is directed to compost pits within the University, highlighting a proactive stance on transforming waste into a valuable resource. The resulting compost is utilized in the green areas of the campus, promoting a circular approach to waste management.

Collaborative efforts with the mess, directing waste to the swain farm through proper agreements, further demonstrate the University's dedication to comprehensive waste management. This cooperative arrangement ensures the responsible disposal of waste generated in the dining facilities.

Moreover, the utilization of 1450 kg of sludge from the Sewage Treatment Plant (STP) for plantation reflects an innovative approach to resource utilization. This initiative not only manages sludge effectively but also contributes to greening efforts on the campus.

The provision of an in-house compost plant for converting compostable solid waste into usable compost showcases the University's investment in infrastructure that aligns with sustainable practices.

The University's waste management practices illustrate a holistic and environmentally conscious approach, incorporating recycling, composting, and

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collaborative agreements for responsible waste disposal. These efforts not only contribute to a cleaner and greener campus but also set an example for sustainable waste management in educational institutions.

Presenting Images of Vermi Compost Pit

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LIQUID WASTE MANAGEMENT

Quantum University's steadfast commitment to environmental conservation is exemplified through its comprehensive water management initiatives, specifically targeting water scarcity concerns within the campus. The university employs an integrated strategy, treating all wastewater generated on-site, recycling the treated water for activities such as flushing and irrigation, and repurposing the generated sludge as organic fertilizer. This holistic approach not only reduces the demand for fresh water but also minimizes reliance on chemical fertilizers, contributing to sustainable and responsible water and soil management.

Recognizing the global challenge of water shortages, Quantum University actively addresses this issue by treating and recycling 100% of its wastewater. This commitment aligns with the United Nations' emphasis on sustainable water management practices. The Sewerage Treatment Plant at the university utilizes advanced technologies and a diverse range of treatment schemes to ensure thorough and environmentally sustainable wastewater management.

The treatment process unfolds through several stages, including initial screening to remove debris and separate oil and grease, equalization tank and Moving Bed Biofilm Reactor for biological treatment, a compact sewerage treatment plant for space-efficient treatment, a multi-media filter for further refinement, chlorine dosing for disinfection, and responsible disposal of treated water.

Moreover, the university's approach extends to garden irrigation, where treated water from the Sewage Treatment Plant is repurposed for watering plants and gardens. The strategic installation of irrigation lines ensures targeted delivery to the root systems, minimizing water wastage and promoting efficient water use in landscaping practices.

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In essence, Quantum University's initiatives in water management reflect a commitment to cutting-edge technologies, environmentally conscious practices, and the responsible use of water resources. The incorporation of various treatment schemes not only meets regulatory standards but also aligns with the university's broader mission of reducing environmental impact and promoting sustainable water and soil management. The accompanying images showcase the practical implementation of this commitment through the watering of gardens and plants using treated water from the Sewage Treatment Plant.

Images of Sewage Treatment Plant.

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Images of watering garden/Plant Through STP Treated water

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E-WASTE MANAGEMENT

Quantum University, a beacon of innovation and sustainability, spearheads e-waste reduction through strategic initiatives. At the forefront is a commitment to timely system upgrades, ensuring electronic equipment remains cutting-edge and functional. By adopting a proactive approach, the university minimizes e-waste, steering clear of premature disposals.

Central to this endeavor is the extension of electronic device lifespans through systematic upgrades. This not only curtails the frequency of replacements but also conserves valuable resources, aligning with the university's dedication to environmental responsibility.

Within the institution, the establishment of an E-Waste Room stands as a testament to its commitment. This dedicated space serves as a hub for the proper dismantling, repair, and assembly of electronic items, fostering resource recovery and innovative practices. Moreover, the E-Waste Workshop presents a unique educational opportunity for students. Engaging in hands-on experiences, they delve into hardware components and electronic repair techniques,

significantly enhancing their understanding of responsible electronic waste management. Quantum University's holistic approach not only shapes a sustainable future but also nurtures a generation of mindful, eco-conscious leaders.

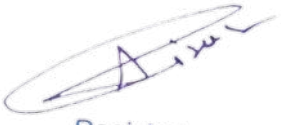

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Image of E Waste Room

Ensuring Responsible E-Waste Disposal

Quantum University takes a steadfast approach to e-waste disposal, adhering meticulously to government norms as outlined by the Uttarakhand Pollution Control Board. Stringent guidelines govern the disposal process, with all electronic items being formally written off before their transfer to authorized vendors for subsequent processing.

A Memorandum of Understanding (MOU) serves as a pivotal agreement between QUANTUM UNIVERSITY and ATTERO RECYCLING PRIVATE LIMITED, the authorized vendors entrusted with e-waste disposal. This formal partnership underscores the institution's commitment to responsible electronic waste management. Quantum University takes measures to ensure that e-waste is channeled exclusively to these designated points, exemplifying strict compliance with prevailing regulations. By upholding these standards, the university not only prioritizes environmental

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stewardship but also sets a benchmark for ethical e-waste disposal practices within the academic community.

ATTERO RECYCLING
(It's not waste, until it's wasted)
An EMS ISO 14001:2004 & OHSAS 18001:2007 company

Date 08-September-2022
Invoice .....

Reference no. PREQ28796
Reg. UE/PCB/HO/E-Waste/A-1/2021/91

This is to certify that ATTERO RECYCLING has picked
2170 Kgs of Electronic Equipment Collected
from
Quantum University

22 Km , MileStone , Mandawar Roorkee –Dehradun Highway Roorkee
All the material has been processed in an environment friendly manner, in accordance with the guidelines set by the authorised agency at our facility in Roorkee.

By Processing obsolete equipment, we are doing our duty to help keep our environment clean.

Rohan Gupta
Chief Operating Officer, Attero Recycling

173, Village Bhagwanpur, Raipur Industrial Area,
Roorkee – 247661, Uttarakhand

Image of MOU Signed for E Waste

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BIOMEDICAL WASTE MANAGEMENT

Quantum University Roorkee is committed to sustainable healthcare practices aimed at reducing its environmental footprint. Through careful management and adherence to strict protocols, the university ensures that the generation of harmful medical waste is minimized. Additionally, the institution prioritizes the efficient use of resources by employing innovative techniques to limit the quantity of blood samples required for various procedures, thereby contributing to a more sustainable and eco-friendly approach to medical research and education. Furthermore, the implementation of rigorous waste segregation measures, with medical waste sorted into different color-coded containers, underscores the university's dedication to responsible waste management practices. These efforts culminate in the safe disposal of medical waste through the utilization of advanced incinerator technology, aligning with Quantum University's commitment to environmental stewardship and community well-being

Biomedical Waste Collection

At Quantum University, the process begins with the rigorous segregation of biomedical waste originating from the Primary Health Centre and the various departments of the School of Health Science. This meticulous sorting encompasses a range of materials, including used medical equipment, disposable items, and other biohazardous substances. Our institution employs specialized bins to facilitate this organized waste management system

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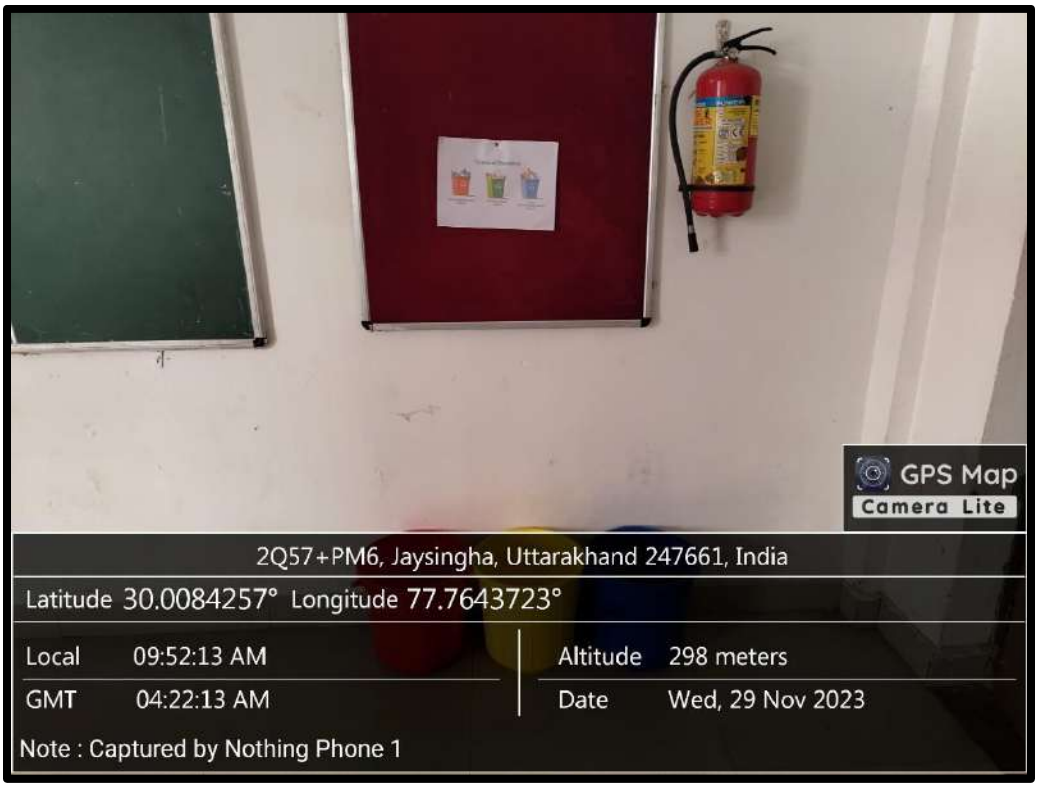
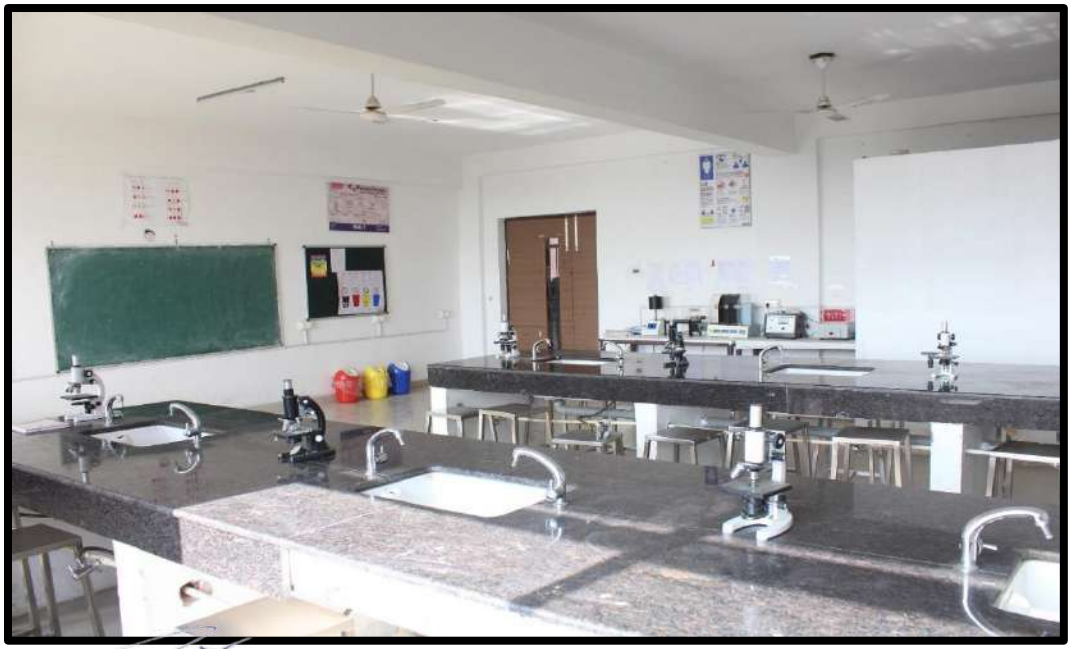
Presenting Images of Biomedical waste Collection





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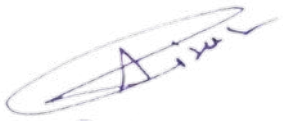
Incinerator Machine for disposal of Biomedical Waste

Quantum University Roorkee employs cutting-edge incinerator technology for the safe and efficient disposal of biomedical waste. This state-of-the-art incinerator machine is specifically designed to handle the unique challenges posed by medical waste, ensuring thorough destruction of potentially hazardous materials while minimizing environmental impact.

Equipped with advanced combustion chambers and filtration systems, the incinerator operates at high temperatures, effectively sterilizing and reducing biomedical waste to inert ash. Stringent emission control measures are implemented to prevent the release of harmful pollutants into the atmosphere.

The university follows strict protocols for the operation and maintenance of the incinerator, with trained personnel overseeing the process to ensure compliance with regulatory standards and safety guidelines. Regular inspections and monitoring are conducted to uphold the integrity of the system and mitigate any potential risks.

By utilizing this sophisticated incinerator technology, Quantum University demonstrates its commitment to responsible waste management practices and environmental stewardship, safeguarding both public health and the surrounding ecosystem.



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Incinerator available in Department of Paramedical Sciences Lab

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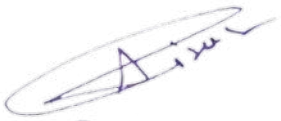
WASTE RECYCLING SYSTEM

At Quantum University, a comprehensive waste management system is in place to handle various types of waste, including paper waste, scrap materials, and other recyclables. These items are collected and stored in designated yards or storage facilities on campus. Periodically, the university collaborates with local kabaddi walas (scrap dealers) to sell these recyclable materials. The kabaddi walas purchase the recyclables from the university and then transport them to recycling facilities for processing. The proceeds generated from the sale of recyclable materials are deposited into the university's account office. This practice not only promotes environmental sustainability by diverting waste from landfills but also provides a source of revenue for the university. Additionally, by engaging with local kabaddi walas, Quantum University contributes to the local economy and fosters community partnerships



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Plastic Scrap collection unit

At Quantum University, multiple collection points for plastic scrap are strategically located throughout the campus. These designated locations ensure accessibility and convenience for students, faculty, and staff to dispose of plastic waste responsibly. Placed at key areas across the university premises, such as near academic buildings, common areas, and dining facilities, these collection points encourage the proper segregation and disposal of plastic materials. Whether it's bottles, containers, or packaging, individuals can easily deposit their plastic waste at these locations. Regular monitoring and servicing of these collection points help maintain cleanliness and efficiency in plastic waste management. By providing multiple convenient locations for plastic scrap disposal, Quantum University reinforces its commitment to sustainability and environmental responsibility throughout its campus community.

Presenting Image of Plastic Bank

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Used oil Collection Point

At Quantum University, a specialized collection point is established for the disposal of used oil generated from buses and generators. This designated area serves as a convenient location on campus where individuals can safely deposit used oil from these sources. Strategically situated for accessibility, the collection point accommodates the disposal needs of university-operated vehicles and equipment, including buses and generators. Proper disposal of used oil helps prevent environmental contamination and supports sustainable waste management practices. Regular monitoring and maintenance of the collection point ensure its functionality and cleanliness. By providing this dedicated facility, Quantum University demonstrates its commitment to environmental stewardship and responsible management of resources.

Presenting Image of Used oil Yard

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SUMMARY:

Quantum University is dedicated to pioneering sustainable waste management practices aligned with global environmental goals. Through a comprehensive approach encompassing solid waste, liquid waste, e-waste, and biomedical waste management, the university demonstrates its commitment to environmental responsibility and innovation.

Solid waste management at Quantum University involves efficient segregation, recycling initiatives, and eco-friendly disposal methods. Approximately 70 kg of recyclable waste is sold, while 80 kg of compostable waste is transformed into valuable compost for campus use. Collaborative agreements ensure responsible waste disposal from dining facilities, further contributing to sustainability efforts.

In liquid waste management, the university treats all wastewater on-site, recycling it for activities like flushing and irrigation. Advanced technologies ensure thorough treatment, minimizing environmental impact and promoting sustainable water and soil management. Treated water is repurposed for garden irrigation, enhancing efficiency and reducing water wastage.

E-waste reduction strategies focus on timely system upgrades and responsible disposal practices. An E-Waste Room facilitates dismantling, repair, and assembly of electronic items, fostering resource recovery and student education. Adherence to government norms and partnerships with authorized vendors ensure ethical e-waste disposal.

Biomedical waste management emphasizes minimizing harmful waste generation through strict protocols and innovative techniques. Rigorous segregation and advanced incinerator technology ensure safe disposal, aligning with the university's commitment to environmental stewardship and community well-being.

The university's waste recycling system includes collaboration with local scrap dealers to sell recyclable materials, generating revenue and promoting environmental sustainability. Dedicated storage units for paper waste and strategic collection points for plastic scrap and used oil further reinforce Quantum University's commitment to responsible waste management and resource utilization.

Through these initiatives, Quantum University not only fosters a cleaner and greener campus but also sets an exemplary standard for sustainable waste management in academic institutions worldwide, fostering a culture of responsibility and innovation.

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