University : Al-Mustaqbal University (formerly name: Al-Mustaqbal University College)
Country : Iraq
Web Address : https://uomus.edu.iq/en/default.aspx

13.4.1 Commitment to Carbon neutral University

Link to the public evidence:

https://sustainability.uomus.edu.iq/SDG_Hub/Goals/13

1. Achieving Carbon Neutrality by 2030

Climate change presents growing challenges for energy, water resources, and supply. To address these challenges, Al-Mustaqbal University has established a policy that mandates both staff and students to actively participate in efforts to conserve electricity and water. Al-Mustaqbal University approaches water conservation from four interconnected and efficient dimensions, while promoting responsible electricity consumption.

- 1. Energy Efficiency: Policies should encourage the use of energy-efficient building materials, designs, and technologies to reduce energy consumption during both construction and operation phases.
- 2. Sustainable Materials: Promote the use of sustainable and eco-friendly building materials that have a lower environmental impact, such as recycled materials and renewable resources.
- 3. Water Conservation: Policies can include requirements for water-efficient fixtures, rainwater harvesting, and landscaping that reduces water usage.
- 4. Waste Reduction: Encourage construction practices that minimize waste generation and promote recycling and reuse of construction materials.
- 5. Indoor Air Quality: Ensure that buildings provide a healthy indoor environment with proper ventilation, low-VOC (volatile organic compounds) materials, and pollutant control measures.
- 6. Site Selection: Promote responsible site selection that minimizes environmental disruption and preserves natural habitats.

- 7. Green Certification: Encourage or require green building certifications like LEED (Leadership in Energy and Environmental Design) to ensure compliance with sustainability standards.
- 8. Renewable Energy: Promote the use of renewable energy sources, such as solar panels or wind turbines, in building design.
- 9. Transportation and Accessibility: Consider policies that encourage public transportation access, bike storage, and walkability to reduce the carbon footprint associated with transportation to and from buildings.
- 10. Long-Term Performance: Include measures to monitor and assess the long-term environmental performance of buildings and renovations.
- 11. Incentives and Rebates: Provide incentives, tax breaks, or rebates for builders and property owners who implement green building practices.
- 12. Education and Training: Support training programs and educational initiatives for construction professionals to increase awareness and knowledge of green building practices.
- 13. Adaptation to Climate Change: Consider resilience and adaptability measures in building designs to withstand the impacts of climate change.
- 14. All new and ongoing construction projects must incorporate water-efficient fixtures.
- 15. Aiming for a 100% treatment and recycling of greywater and 50% of sewage by 2030. Cutting-edge technologies will be employed for sewage treatment, ensuring a highly efficient recycling process.
- 16. Implementing effective rainwater harvesting techniques to work toward water neutrality.

These elements can be integrated into construction and renovation policies at various government levels, from local building codes and regulations to national building standards. By incorporating these elements, policymakers can promote sustainable and environmentally responsible practices in the construction industry, leading to more environmentally friendly and energy-efficient buildings.

2. Plans for green buildings construction that adopted in 2024

- 1. There are a progress in building the smart solar building with 2400 watt solar panel in order to provide electricity for lighting, air condoning split unit and absorption refrigerator.

- 2. Energy station has 10 solar thermal water heater, and each one about is 200 kW, to provide hot water for most of the laboratory buildings in winter.

- 3. Al-Mustaqbal University would install solar heater in the roof of the shopping book center as it would be very helpful in the winter season. Additionally, it will consume a lot of energy which in turn reduce the bills of electricity as indicated in Figure 1.

- 4. The plan in the above-mentioned point had many forward steps. Firstly, Air conditioning and refrigeration techniques engineering department, one of the departments in Al-Mustaqbal University announced may industrial projects. For example, heating water can be achieved using solar evacuated tube collector, flat plate solar collector and parabolic solar dish collector (Figures 2-3). Recently, solar dish collector had been designed with solar trucking system for the purpose of heating water(Figure 4).

- 5. There is a plan to install roof mounted solar panels on the admiration buildings. Additionally, there is a plan to install solar panels on the main restaurant as indicated in Figure 5. This makes good and nice looking for the building itself in addition to the energy consumption that we get later.

- 6. However, we recently install solar panels on the roof of the medical buildings as inserted in Figure 5. Additionally, cleaning of these solar panels had been taken into the consideration. Further, many jobs had been offers due to the installation as research studies on the solar energy had been made as in Figure 6. We install Mounted Solar Panels on the main entrance of the university college for lighting as in Figure 8.

Furthermore, on the green area that our students prefer for their social activities like the University , book day, women day, there is a plan to install solar panels for mobile charging as shown in Figure 9.

- 1. Installation of two horizontal-axis wind generator for lighting purposes. This offer job for our society (Figure 10).

- 2. In Iraqi climate, the HVAC devices utilized a lot of electrical power so, we connect the solar energy technology with the HVAC for two major reasons. The first reason is to supply the energy to drive the systems and the second reason is to reduce the emission as much as possible.4. Promoting and creation awareness of energy conservation and management among students and staff with continual improvement for climate change and sustainability.

- 5. The new buildings is planned, constructed and implemented considering the applicable building code regulations, fire code regulations, ADA guidelines, OSU best practices, and zoning code regulations.

- 6. All campus space is managed, renovated in accordance with the policies and procedures of the appropriate committees in the campus such as the Campus Planning Committee, University Space Committee, University Safety Committee, etc.

- 7. Appropriate experts and professionals are licensed to design the sustainable buildings.

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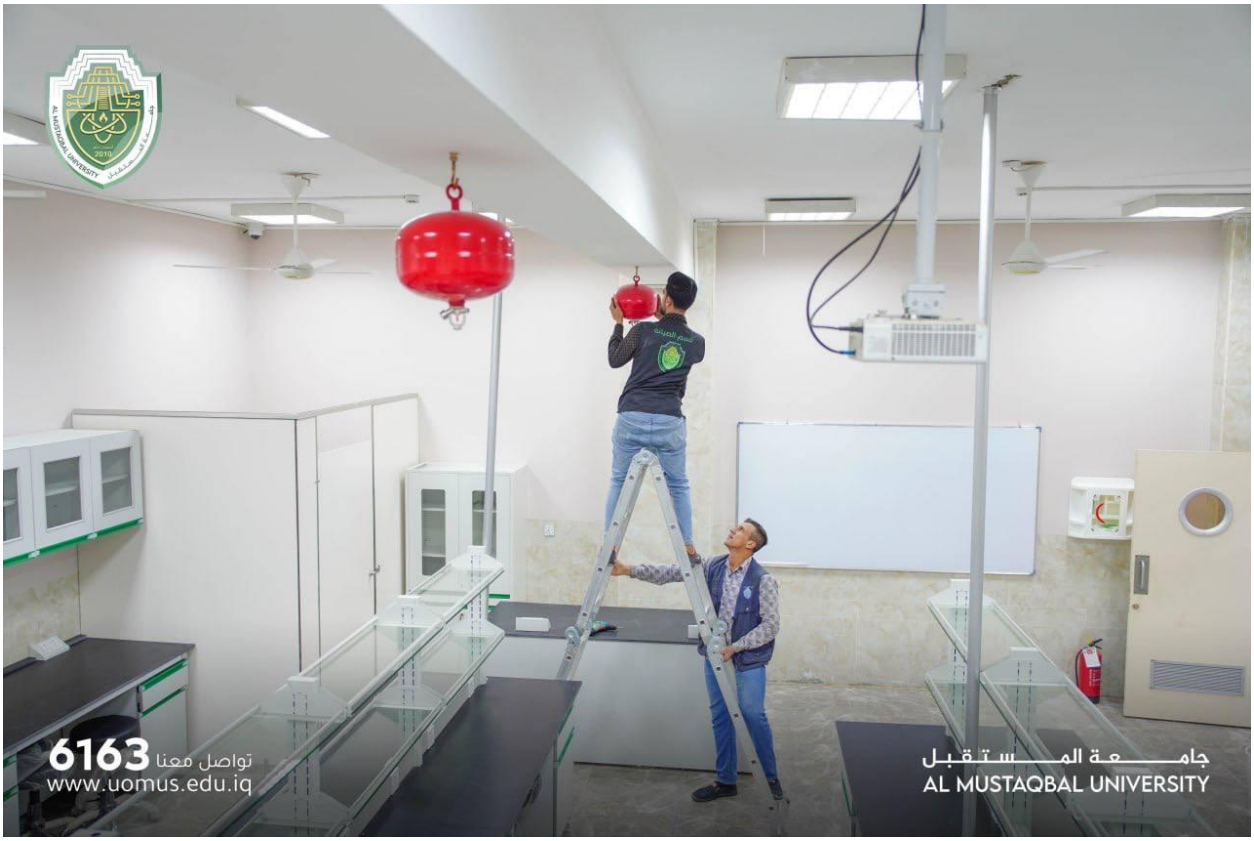

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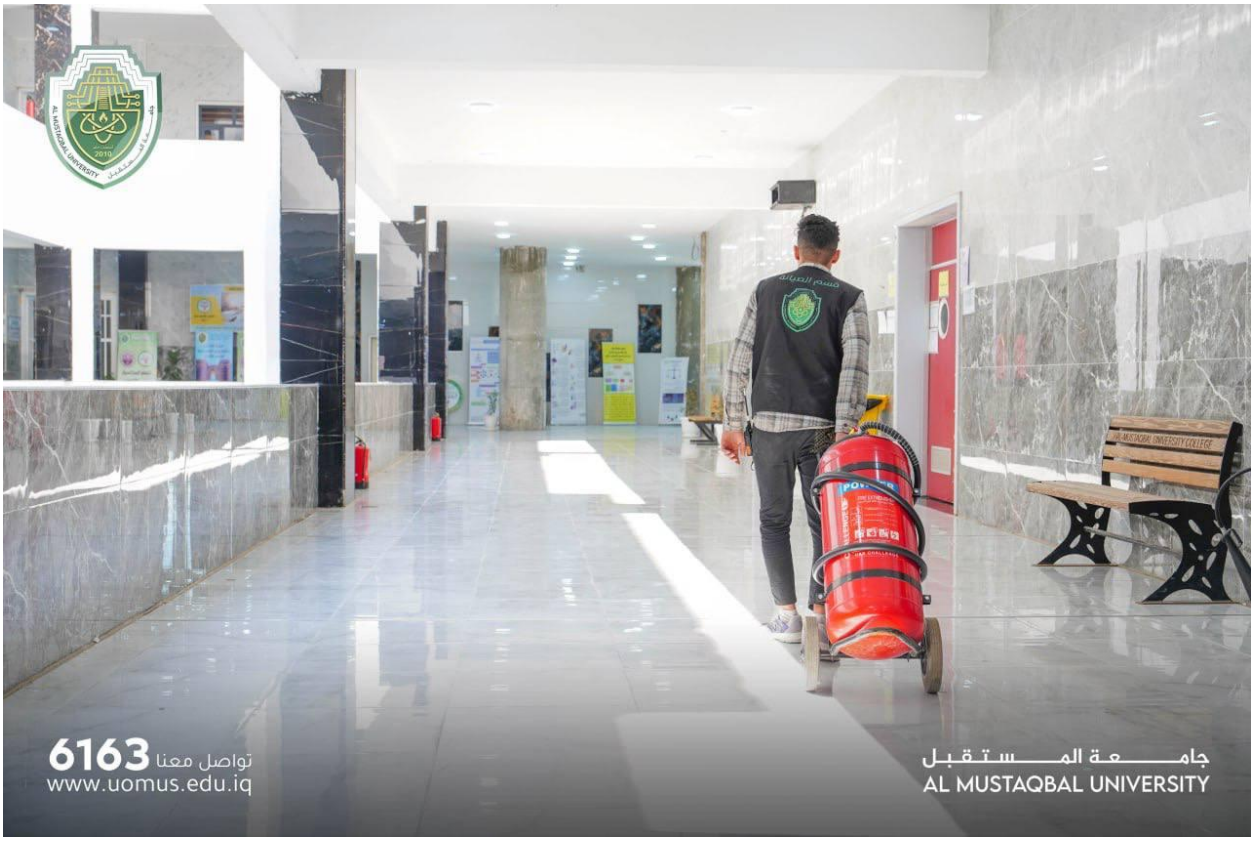

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Figure 1. Use the solar water heater on the roof of the shopping book center

Figure 2. Solar evacuated tube collector

Figure 3. Parabolic collector

Figure 4. Solar dish collector

Figure 5. Roof Mounted Solar Panels on the administration building and the main restaurant.

Figure 6. solar panels on the medical building

Figure 7. studies on solar panels of medical buildings

Figure 8. wind energy systems