

Plan to upgrade Mutah University buildings to higher energy efficiency buildings, 2021



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Mutah University

Authored by: Maintenance and sustainable unit



Mutah University,

Mutah University is located in the town of Mutah in the Karak Governorate, 135 km south of the Jordanian capital Amman and 12 km from the ancient Karak Castle. The university was established by royal decree in 1981, and it is a two-pronged university, civil and military. The military wing began its work in 1984, and in 1986 the Council of Higher Education decided to establish a civilian wing in it.

The area of the university in its main site is 400 acres, 15 colleges, including 7 scientific colleges: science, engineering, medicine, pharmacy and nursing, and 7 humanities colleges: public arts, law, Sharia, educational sciences, sports sciences and a college for graduate studies, in addition to two deanships, namely: the Deanship of Scientific Research, and the Deanship of Student Affairs, and the university offers 105 academic programs, including 53 programs at the bachelor's level, 42 programs at the master's level, 9 programs at the doctoral level, and one program at the higher diploma level.

***Toward
“Green University-Surplus Energy University”***

Maintenance and sustainable unit

The maintenance and sustainable was established unit in 1993. This unit consists of the following departments:

- Maintenance department.
- Mechanical department.
- Electric department.
- Follow-up and field control department.
- Communications Department.
- Buildings department.

The maintenance and sustainable unit performs a large number of duties and tasks, which are the maintenance and sustainment of the university's facilities and buildings, the development of the infrastructure of the various facilities of the university, the operation of all electrical, mechanical, health and communications systems, providing all maintenance work, including public holidays, and providing maintenance services to the local community in Karak governorate.

The department of the maintenance and sustainable unit duties are:

- ***Maintenance Department:***

It performs daily and periodic maintenance of all university facilities, internal and external dormitories, paint, carpentry, aluminum, general maintenance, sanitary works and various construction works.

- ***Mechanical department:***

The Department of Mechanics maintains, maintains and operates central heating and wastewater treatment systems in the purification plant, reuses it for irrigation purposes, and maintains devices and equipment.

- ***Electric Department:***

The Department of Electricity maintains, operates and maintains the electrical system (generating stations and networks), audio systems, and maintenance of electronic devices in the civil and military wings of the university.

- ***Department of Follow-up and Field control department:***

The department follows up and monitors the various university facilities, inspects them, writes reports on any malfunction inside and outside the buildings, follows up on maintenance requests, and secures unit departments with supplies, numbers, necessary spare parts and mechanisms.

- ***Communications Department:***

The Communications Department provides telecommunications services, operates and maintains all university exchanges.

- ***Buildings department***

The Buildings Department monitors and operates buildings and ensures their safety by following up on all building systems such as heating, cooling, lighting, public safety, and others. The department has also taken upon itself to start the process of shifting to surplus energy-producing buildings by starting to develop insulation systems for buildings, replacing windows with energy-saving double-glazed windows, replacing traditional lighting units with energy-saving units such as the LED lighting systems, and using modern air circulation systems to ensure the greatest possible use of the energy used in cooling or heating the air inside buildings.

Presidency Buildings						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	95%
100%	100%	100%	100%	100%	70%	

Engineering faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	100%
100%	100%	100%	100%	100%	100%	

Science faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	33%
0.0%	0.0%	0.0%	100%	100%	0.0%	

Nursing faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	69%
100%	100%	100%	0.0%	50%	65%	

Arts faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	100%
100%	100%	100%	100%	100%	100%	

Business faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	88%
100%	100%	100%	60%	90%	80%	

Law faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	46%
0.0%	0.0%	0.0%	100%	100%	75%	

Social science faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	50%
0.0%	0.0%	0.0%	100%	100%	100%	

Sharia faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	69%
100%	100%	0.0%	70%	65%	80%	

Educational science faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	66%
100%	100%	0.0%	100%	100%	0.0%	

Sport science faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	75%
100%	100%	50%	100%	100%	0.0%	

Medicine faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	62%
60%	60%	60%	75%	75%	40%	

Pharmacy faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	58%
50%	50%	50%	90%	70%	40%	

Information technology faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	35%
0.0%	0.0%	50%	60%	100%	0.0%	

Agriculture faculty						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	0.0%
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

Teaching hall complex						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	100%
100%	100%	100%	100%	100%	100%	

Service buildings						
Partial completion percentage						Total completion percentage
Insulation system	Double glazing windows	Revolving doors	LED lighting system	Solar water heating system	Cooling and heating recovery system	100%
100%	100%	100%	100%	100%	100%	

Within the framework of the strategic plan of Mutah University, the university has taken upon itself to adopt the transformation in the university from an energy-consuming university to an energy-producing and environment-friendly university.

The transformation of buildings to energy-saving, high-efficiency buildings has been started since 2018 until now.

