

REDUCING ENERGY AND WATER CONSUMPTION IN GOVERNMENTAL BUILDINGS IN KUWAIT

Eng. Hassan Albahrani

Introduction

Most of social affairs activities are executed by Ministry of Social Affairs and Labour (MSAL). The main objective of the government is to distribute social welfares for its citizens. This can be done through establishing social units to help families socially and financially, nursing homes for youths, supervision of sport clubs and civil organizations. Additionally, MSAL is responsible to organize and regulate the employments of foreign labors at the private sector.

Energy and water consumption in the State of Kuwait

- Energy and water consumption has increased rapidly in last few years.
- The electricity demand will be more than doubled by 2025.
- Research and Measures have been taken to reduce consumption by adding some code of practices.

MSAL

- MSAL manages around 135 buildings in six Kuwaiti governorates.
- MSAL is responsible of special needs, juvenile and the elderly care.
- Supervise the Co-operative movement in the country.
- Social development through the clubs and gardens.
- Organize work and workers affairs.

PSD

- Public Services Department (PSD) is responsible for supervising contracts and maintaining more than 135 buildings over 6 governorates.
- PSD at MSAL is responsible to maintain and sustain electrical, mechanical, A/C, plumbing and firefighting systems for all MSAL's buildings. Additionally, water and energy conservation efforts have been given to PSD since 2007.

Spreading the culture of rationalization

- Official correspondences to all departments and ministry facilities.
- Official cites visit to educate the employees on rationalization

METHODOLOGY

- PSD implemented a number of measures to reduce energy and water consumption in MSAL buildings.

Programmable Thermostat

- PSD installed Programmable thermostats in most of their A/C units. These have two settings for occupancy and non-occupancy periods.

Periods	Temperature Range (F)	Time Range
Occupancy	70 -72	05:00 – 14:30
Non-occupancy	78 - 80	14:30 – 05:00

Replacement of Air-conditioning and Lighting Systems

- More efficient PAC and mini-splits were replaced with the existing ones.
- Energy saving lamps were used to reduce the energy usage.

Shutter and solar films for windows

- Shutter and solar film helps reduce heat entering the buildings.
- Cooling loads and energy consumption are therefore reduced.

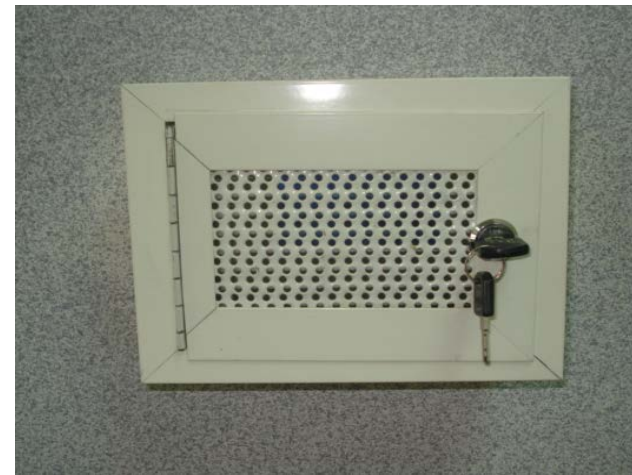


A/C unit types

- Two types of A/C units are used in MSAL buildings which are mini-splits and PAKs.
- 90% of the A/C systems used in the ministry's buildings are the mini-splits.

Programmable Timing Thermostats

- Installation of temperature sensors for A/C sets in the ministry.



Replace Low efficiency A/C units

- The ministry replaced the existed with high-efficiency and energy saving A/C units.



Installation of high-efficiency lightening systems

- Replaces the existing lightening system with low power consumption.



Additional measures

- Insulation materials.
- Water rationalization.



Future plan

- Collaborating with the country's expertise to develop the of using and saving energy and water.
- Installing Occupational thermostat.

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