

ENERGY AUDITING OF INTI INTERNATIONAL UNIVERSITY HVAC SYSTEM

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ABSTRACT

This project is to evaluate the energy consumption the Air Conditioning system of INTI International University to reveal the potential areas of energy savings on building operation with better efficiency, lower costs and go green concept. The recommendations should not affect the comfort of building users by identifying energy conservation measures for implementation that meet the INTI International University's financial criteria and take into consideration building technical and operational limitations. The methodology of the project was to conduct walk through audit to understand the current system, collect relevant operational data, identify potential energy saving areas and prepare energy audit report. The results of the project indicated the performances of water cooled chillers and air handling unit is not up to standard whereas the setting of space temperature is too low. Moreover, The HVAC system in INTI International University did not perform well enough. The lowest chillers' coefficient of performance (COP) is 3.16 which are nowhere near 4.9, the standard COP for chillers. Among the seven random AHU data provided, none of their actual capacity is able to reach 90% of design capacity. The lowest performance for AHU was 42.27% below design load respectively. The average space temperature from the recorded zones ranged from 19.7°C to 22°C which is lower than required. Four energy conservation measures were suggested which is replacing the water cooled chillers, increase space temperature, ensure necessarily closed entrance & exit, and utilizing filters for energy conservation. The HVAC system in INTI International University did not perform well enough and required some rectifications. This project could be a base in case there is a need in exploring other energy consumption such as lighting, electrical supply, load factor, main switch boards and efficiency of electrical devices.

Keywords: Energy Conservation Measures, Energy savings, HVAC, Space temperature, Water cooled chillers.