

Abstract

Experimental and Numerical Investigation of Optimum location for FCU in an all-water Air conditioning system.

Through out this study an all water Air Conditioning system was especially designed and constructed to determine the optimum location for a fan cooling unit inside a room. The system consists of condensing unit, storage tank, Fan Coil Unit [FCU], circulating pump and Direct Digital Control unit [DDC]. The cooling load of a selected isolated space was calculated using a computer program called HVAC Explorer. Experiments were conducted to measure the temperature and velocity at different location inside the conditioned space. A CFD package [FLUENT Code] was used to determine the best location of the fan coil in the conditioned space by studying the flow pattern. The experimental results then were compared with the CFD results. Results of the study revealed that the experimental results validated the CFD model results. Consequently, the best location of the FCU is determined.