

# AIR CONDITIONING AND REFRIGERATION Journal

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## Variable Frequency Drives for Green Buildings

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The voluntary pursuit of any activity, which encompasses concern for energy-efficiency, environment, water conservation, use of recycled products and renewable energy can be defined as “green”. The use of variable frequency drives for ten air handling units and two secondary chilled water pumps ranging in size from 0.75 kW to 4 kW for the HVAC system at the CII Sohrabji Godrej Green Business Centre at Hyderabad met the following criteria characterizing the requirements of a green building:

- use of energy-efficient and eco-friendly equipment
- improved indoor air quality for human safety and comfort
- use of effective controls and BMS
- an ISO 14001 certified plant and an environmentally friendly manufacturing unit



To handle the fluctuations in ambient conditions during seasons, between mornings and nights and the variations within the building with changes in occupancy and activities,

the controls within the HVAC system must be capable of adapting to these changes, from time to time, in order to offer the best possible comfort at the least possible energy cost.

**Figures 1 and 2** depict the process loops for the air handling unit and the chilled water system.

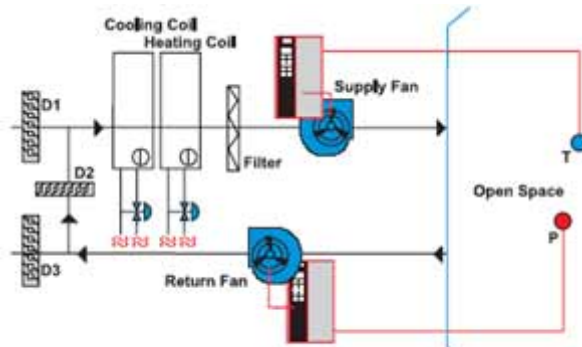


Figure 1 : Typical AHU control loop and not a site depiction.

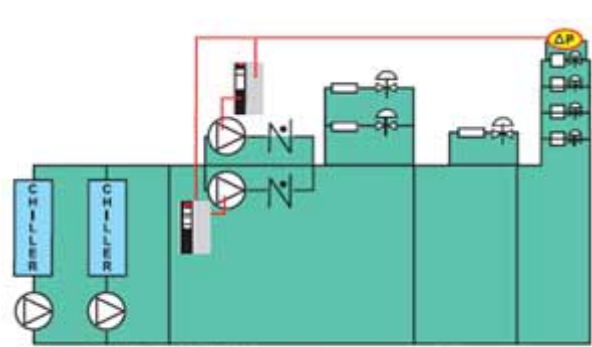


Figure 2 : Typical chilled water system control loop and not a site depiction.

**Electro – Mechanical Consultants:** *Spectral Services Consultants, New Delhi.*

**HVAC Contractors:** *Trac Fujico Air Systems Limited, Bangalore.*