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ACTIVE SYSTEMS

WATER SYSTEMS

PAVEGEN 2.0

A kinetic drive turns footsteps into energy and stores the energy in a battery. Incorporates a measurement and verification program. Can be connected to process, equipment and lighting loads.

SOLAR PV ARRAY

Three 435W PV arrays with 20.1% panel efficiency - two over the parking area and one along the south edge of the roof of the building provide approximately 27.69 MWh of electrical energy for the building.

HYDRONIC RADIANT FLOORING SYSTEM

Hydronic radiant floor heating delivers heat directly from the floor surface to the people and objects in the room via infrared radiation. This system pumps heated water from the GSHP through tubing laid under the floor. The flow of the hot water is controlled using valves or pumps and a thermostat which regulates the room temperature.

INSULATED WINDOW SHADES

Automated shades that increase window thermal performance yielding an effective R-value of 5. They also provide required protection from the summer sun.

GROUND SOURCE HEAT PUMP

Meets 70% of the institute's heating and mechanical cooling loads by utilizing a refrigerant loop installed below the exterior running track. The remaining 30% of the loads are met through a mechanical HVAC system and supplemented with earth tubes.

EVACUATED SOLAR WATER COLLECTOR

The solar panels collect heat by absorbing the sun's energy in the form of electromagnetic radiation. The solar heated water is used as the main domestic hot water source and is supported by a mechanical HVAC system.

RAINWATER HARVESTING

Underground irrigation storage collects rainwater from the running track and parking lot for irrigation. Gutter system on roof also captures and pre-filters stormwater runoff that is treated and used in the hydro therapy pools.

BIOFILTRATION

System uses beneficial bacteria to colonize the interior surfaces of the filter to degrade and oxidize organic pollutants, ammonium and other contaminants as the wastewater is retained in a filter medium. Air then passively circulates throughout the filter medium and provides an aerobic treatment environment.

GREY WATER SYSTEM

Wastewater generated from laboratories, showers, baths, and water fountains is recycled on-site. Water is filtered and treated and used for ultra low flow water closets and irrigation purposes.

