

## **ABSTRACT**

The 25,534 ft<sup>2</sup> (2,375m<sup>2</sup>) New Mexico Department of Agriculture building was the first large scale application of both solar heating and solar absorption cooling in the nation.

Located on the campus of New Mexico State University, this \$1.5million structure was financed by an appropriation by the 1974 State Legislature. This building has been in continuous operation since September 1975. Solar heating, cooling and domestic hot water are provided by an integrated system which utilizes a collector array with a net facial area of 6,800 ft<sup>2</sup> (632 m<sup>2</sup>).

The system operates in three various modes, full heating, full cooling and intermediate ( dual mode operation), allowing for the implementation of energy conserving schemes. Two 14,000 gallon (53,000 liters) pressurized water tanks are utilized for hot cold storage. A dual loops system is utilized with a water-glycol solution passing through the collectors and exchanging energy with water which is circulated throughout the remainder of the system.

A documentation of the system, cost analysis and the first available performance data is presented.