

Solar Energy Demonstrations

The building at upper left houses the offices of the Reedy Creek Utilities Company, a Walt Disney Productions subsidiary which provides utility services for the 27,000-acre Walt Disney World resort complex at Orlando, Florida. The photos below show the

Visitors Center at Mount Rushmore, South Dakota. These are two of more than 100 solar-powered facilities managed by NASA's Marshall Space Flight Center for the Department of Energy's National Solar Heating and Cooling Demonstration Project. Aim of the program is to promote national energy conservation by stimulating

interest in solar energy as an alternative to fossil fuels.

Solar energy furnishes all of the heating and hot water needs, plus 80 percent of the air conditioning, for the two-story Reedy Creek building. A unique feature of this installation is that the 16 semi-cylindrical solar collectors (center photo on opposite page with closeup of a single collector below it) are not mounted atop the roof as is customary, they actually *are* the roof. This arrangement eliminates the usual trusses, corrugated decking and insulating concrete in roof construction; that, in turn, reduces overall building costs and makes the solar installation more attractive economically. The Reedy Creek collectors were designed and manufactured by AAI Corporation of Baltimore, Maryland.

The Mount Rushmore installation is somewhat different. It employs 112 individual collectors which are smaller than Reedy Creek's and are flat plates rather than concave. They supply more than half the building's heating/hot water needs and about 40 percent of the cooling requirement. Lennox Industries, Marshalltown, Iowa produced the Mount Rushmore collectors.

Marshall Space Flight Center's role in the National Solar Heating and Cooling Demonstration Project is that of supervisor and technical advisor for a variety of demonstrations in such facilities as industrial plants, office buildings, schools, museums, libraries and private homes. The Center lends its broad solar energy expertise in handling contract negotiations, reviewing designs and overseeing construction. A major Marshall responsibility is monitoring solar equipment performance. Sensors installed by the Center's engineers take frequent data samplings at each site. The information is stored on tape and relayed once a day to a central processing facility at Marshall's Huntsville, Alabama headquarters. There it is analyzed and evaluated to determine the effectiveness of the various types of equipment being used in different parts of the country, providing information that can be applied to development of advanced solar energy systems for the future.

