Water Conservation Test Bed Project
at the LLNL Central Cafeteria

June 2009

The Water Conservation Test Bed Project currently under development at the Laboratory is a rain water harvesting system designed to capture rain from the roof of the Laboratory's Central Cafeteria and reuse it when needed to irrigate the surrounding landscaping. Between 90,000 and 210,000 gallons of rain water can be expected to fall on the roof of the cafeteria annually, depending on yearly variations. When completed, the Test Bed Project will capture water from approximately half of the cafeteria roof. Plans are to broaden the project to capture rain from the remaining portion of the roof in the future.

Rain falling on the south and east portions of the Central Café roof will flow to a large sump located at the northeast corner of the building. From there, the water will be pumped into six underground fiberglass holding tanks where it will be stored for future irrigation use. An irrigation controller directs pumps in the holding tanks to pump the water into the irrigation system, when needed. The stored water will be used until the tanks are emptied. The system then switches back to normal domestic water use until captured rain water is once again available in the tanks.

In addition, the system can be modified to utilize other sources of reusable water, such as nearby Lake Haussmann and ground water.

This rainwater harvesting project is part of an overall Laboratory effort to reduce potable water use. Lessons learned from this project – from early conceptual design to completion of an efficiently functioning system – will form the basis of future water conservation projects at the Lab.

The project has completed its first phase of construction, including installation of the holding tanks, as well as underground piping to the new irrigation system and to the Central Cafeteria. The second phase of construction will begin soon and finish in mid-August. The second phase will include physical connection of the roof downspouts to the underground collection system and installation of the required sumps, pumps, filters and controllers for the system at the northeast corner of the cafeteria.

New landscaping next to the Laboratory's Central Cafeteria, showing three of the manway access covers for the six underground fiberglass holding tanks used to store captured rainwater for future irrigation use.

- end –