Environment Is Paramount

The facility is a showcase for land use and architectural integration into the natural landscape. The multi-story design reduces the building footprint, conserving valuable land for open space and future expansion needs. The building incorporates water conservation, sustainable materials and indoor environmental quality principles.

Building Footprint

The 71,000 square foot Science & Technology Facility is a three-level building. The ground level houses laboratory and office space, while the second level has general laboratories and the Process Development and Integration Laboratory. The third level is reserved for mechanical support systems. S&TF connects with the Solar Energy Research Facility via an elevated bridge. About 75 staff will be housed in the facility.

National Renewable Energy Laboratory
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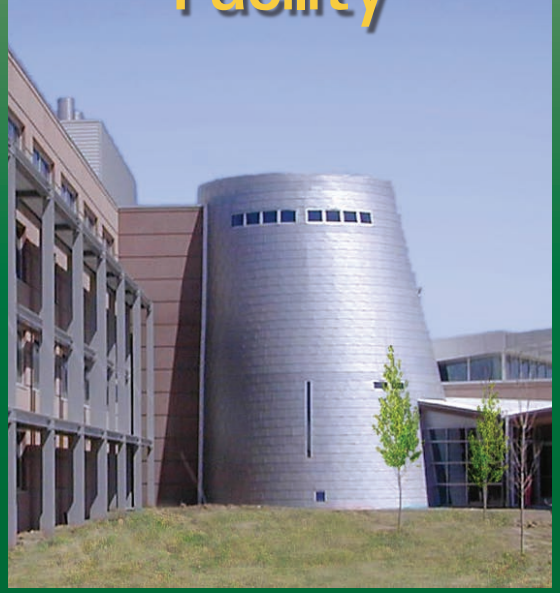
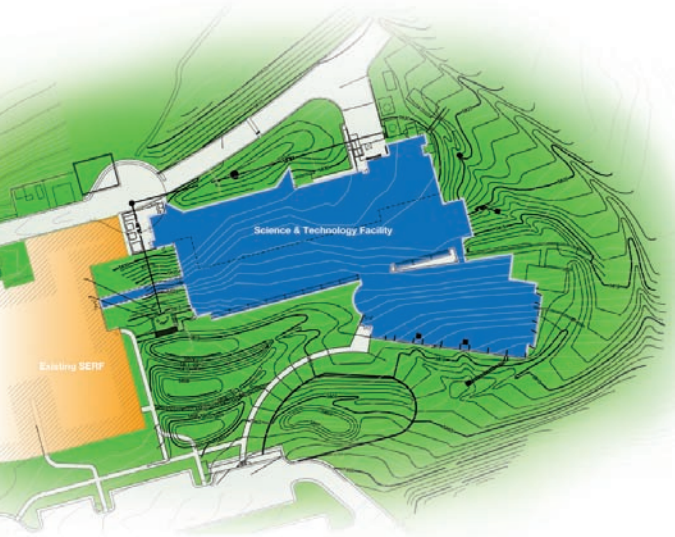


NREL is the U.S. Department of Energy's primary laboratory for renewable energy and energy efficiency research and development



The Science & Technology Facility (S&TF) is the latest addition to the U.S. Department of Energy's (DOE) state-of-the-art research buildings on the National Renewable Energy Laboratory campus. The showcase facility is essential to the development and commercialization of promising new renewable energy technologies. Designed to foster strong collaboration between government, industry and academia, the facility is a critical resource for advancing energy priorities of the President's Advanced Energy Initiative.

Adding Crucial Research Capabilities

The S&TF will help accelerate the development and commercialization of promising new energy alternatives—technologies that will cleanly and economically meet future demand for energy while reducing our nation's reliance on imported oil. The 71,000-square-foot facility provides needed laboratory space and expands research capabilities necessary to accomplish DOE's goals in photovoltaics, hydrogen, solar, buildings, solid-state lighting, thin-film coatings and devices, electrochromics and nanotechnologies.

Fostering Collaboration

The building is uniquely designed—with flexible and open laboratory areas—to foster collaboration among government, industry and universities. The main feature is an 11,400 square-foot Process Development and Integration Laboratory (PDIL) which will provide space to configure equipment to explore process integration options. Researchers can work side by side with industry to find ways to move promising technologies from concept to first-time manufacturing and commercialization. The PDIL offers a new class of tools for thin-film photovoltaic deposition, processing and characterization. Researchers can pass samples between laboratory equipment in a controlled environment, avoiding contamination and speeding the research process. In addition, there are nine distinct laboratories for advanced material synthesis, characterization and general support. These comprise a flexible laboratory module, where space can be combined to form smaller and larger labs as needed. There are seven interaction spaces where researchers can share scientific results.

Speeding New Technologies to Market

By creating a working environment that stimulates communication between the scientists and engineers working on various pieces of the research puzzle, it is expected to significantly cut the time it takes to commercialize new technologies. Researchers will employ the laboratory to resolve the complex manufacturing issues confronting the next generation of solar, hydrogen and fuel cell technologies; and to support U.S. industry in the fast-expanding and highly competitive international marketplace for renewable energy systems.

Energy Efficiency Features

The Science & Technology Facility is a model for energy efficiency and environmental sustainability. It is designed to be NREL's first Gold-level Leadership in Energy and Environmental Design (LEED™)-certified building, incorporating features that are expected to reduce energy use by 41 percent, compared to similar new federal buildings. Extensive use of daylighting reduces energy needs for electric lighting, and advanced heating, ventilation and cooling systems reduce energy consumption by half. Other features include chemical hoods that monitor air flow; energy recovery from exhaust air to temperature-condition fresh air; displacement ventilation for the offices; and high-efficiency pumps, fans and transformers. A new, shared high-efficiency chiller will save energy for both the S&TF, as well as the adjoining Solar Energy Research Facility.