

The Physical Sciences Facility will apply for Leadership in Energy and Environmental Design, or LEED, certification status. The LEED green building certification program is the nationally accepted benchmark for the design, construction and operation of high-performance green buildings.

LEED promotes a whole-building approach to sustainability by recognizing performance in sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

PNNL utilizes several LEED Accredited Professionals who implement the knowledge and understanding of proper building practices, LEED principles, and the LEED rating system.

PNNL's recently opened Biological Sciences Facility and Computational Sciences Facility are LEED Gold certified.



The Physical Sciences Facility is a cornerstone in PNNL's Capability Replacement Laboratory project, which will transform PNNL into one of the most modern laboratories in the national laboratory system.

ADDITIONAL INFORMATION
Pacific Northwest National Laboratory
<http://www.pnl.gov/>

 Printed on recycled paper.

June 2010

PNNL-SA-XXXXX

Physical Sciences Facility



**LEADING THE WAY IN
SUSTAINABLE DESIGN
AND OPERATIONS**



PHYSICAL SCIENCES FACILITY

The Physical Sciences Facility will be home to about 220 staff who support PNNL's national and homeland security, and energy research missions. The \$224 million complex is funded by the U.S. Department of Energy's Office of Science, the National Nuclear Security Administration and the U.S. Department of Homeland Security.

The PSF is about 200,000 square feet and comprises several separate buildings containing unique, state-of-the-art equipment:

▶ In the **Materials Science & Technology Laboratory**, PNNL scientists will develop and test high-performance materials used in next-generation energy, construction, and transportation technologies and systems. Researchers

will work with metals, ceramics, polymeric materials, composites and specialized coatings and surface treatments.

- ▶ The **Radiation Detection Laboratory** will house laboratories containing radionuclide measurement technologies and capabilities. Here, PNNL scientists will develop and apply radiation detection methods needed for identifying weapons of mass destruction and terrorist activities, and in support of international treaties and agreements.
- ▶ In the **Ultra-Trace Laboratory**, PNNL scientists will develop and apply radiation detection methods needed for identifying weapons of mass destruction and terrorist activities, and in support of international treaties and agreements.
- ▶ The **Large Detector Laboratory** and accompanying Radiation Portal Monitoring Test Track will be used, in part, to develop and test radiation detection technologies designed to be deployed at U.S. borders and ports of entry.
- ▶ The **Deep Lab** is located 40 feet below ground and will support important homeland and national security missions including the development and advancement of radiation detection technologies.

The Physical Sciences Facility was designed and is being constructed incorporating, but not limited to, the following concepts and principles of sustainable design:

SUSTAINABLE SITE

- *Environmentally sensitive stormwater management*
- *Reduction of heat island effect to lessen energy demand*
- *Light pollution reduction*

WATER EFFICIENCY

- *Water efficient landscaping*
- *30% water usage reduction*

ENERGY AND ATMOSPHERE

- *Variable air volume fume hoods*
- *Variable frequency-driven fans, pumps and chillers*
- *High efficiency condensing hot water boilers*
- *Heat recovery system*
- *Energy efficient lighting and controls*

INNOVATION AND DESIGN PROCESS

- *Green housekeeping practices and products*

INDOOR ENVIRONMENTAL QUALITY

- *Low emitting materials*
- *Lighting control system*