



LAWRENCE
LIVERMORE
NATIONAL
LABORATORY

UCRL-CONF-228031

Livermore BSL-3 Lab Project Profile Sheet

B. K. McDowell

February 14, 2007

The 2007 International Conference on Biocontainment
Facilities
San Diego, CA, United States
March 10, 2007 through March 14, 2007

Disclaimer

This document was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor the University of California nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or the University of California, and shall not be used for advertising or product endorsement purposes.



FACILITIES PROJECT PROFILE DATA

Profile Information Provided By: Bruce McDowell **Title:** BSL-3 Facility Program Manager

Laboratory Owner: U.S. National Nuclear Security Administration

Building location: Lawrence Livermore National Laboratory

Principal building function: Biosafety Level III Laboratory Space

Project type: Design/Build

Architect: Britz-Heidbrink (Techspace)

Builder: Britz-Heidbrink (Techspace)

Construction method: Prefabricated Modular

Project start date: August 2003

Completion date: August 2006

Total design time: 7 Months

Total construction time: 18 Months

Total GSF: 1590

Space allocation:

laboratories:	NSF	622	(44	%)
offices:	NSF	(0	%)	
pilot plant:	NSF	(0	%)	
lab support:	NSF	579	(41	%)
Other:	NSF	210	(15	%)

TOTAL NSF: **NSF 1411 (100 %)**

Overall HVAC requirement: 2.15 CFM/NSF

FACILITIES PROJECT PROFILE DATA

Laboratory fumehoods (vendors): None

Biological safety cabinets (vendors): NUAIR Class II Type A-2 (thimble connection)

Other equipment/furniture of interest (vendors):

- Animal tissue digester (WR2)
- VHP Decontamination System (Steris)
- Autoclave (Steris)
- Animal Cage Rack (Lab Products)

Construction cost: \$2,032,000

Construction cost/GSF: \$1,278/GSF

Total project cost: \$2,450,000

People occupancy cost:

Square footage occupancy cost: \$1,541/GSF

Unique Design Objectives:

1. STD-1020-2002 PC-2 seismic requirements
2. LLNL Security Plan / UC Select Agent Human Reliability Plan

Unique Design Solutions:

1. Foundation anchors and seismic strapping
2. Monitored building and laboratory personal identification systems

BSL-3 Facility at Lawrence Livermore National Laboratory



Building Safety Systems

- Meets DOE STD-1020-2002 PC-2 seismic requirements
- HEPA-filtered biosafety cabinets in each laboratory
- HEPA-filtered animal cage rack
- Double HEPA-filtered building exhaust
- Vaporous hydrogen peroxide room decontamination system
- Negative air-pressure in laboratory space
- Sealed laboratory surfaces
- Retention tank for liquid wastes
- Autoclave for waste treatment
- Tissue digester for waste treatment

About the Presenter

BRUCE McDOWELL is the BSL-3 Facility Program Manager at the Lawrence Livermore National Laboratory. His management responsibilities are focused on completion of construction and ensuring that key regulatory and programmatic requirements have been fully integrated into facility plans, procedures and staff training.

Since joining the University of California in 1991, Mr. McDowell has played a key role in the management teams responsible for construction and startup of significant new facilities at LLNL. These include the new \$80 million Decontamination and Waste Treatment Facility, one of the first DOE facilities to receive a RCRA hazardous waste treatment, storage, and disposal permit, and the Terascale Simulation Facility, which houses BlueGene/L, currently ranked by *TOP500 Computer Sites* as the fastest computer in the world.



Mr. McDowell also manages multi-laboratory technical teams in support of Nuclear Regulatory Commission decisions regarding relicensing commercial nuclear power plants. Prior to government service, Mr. McDowell was responsible for licensing and constructing small-scale private hydroelectric projects in Northern California.

Mr. McDowell received a Masters of Science in Resource Economics from the University of California at Davis and an MBA from the University of San Francisco. He is currently pursuing a graduate degree in Atmospheric Science at UC Davis.

This work was performed under the auspices of the U. S. Department of Energy by University of California, Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.