

AIA-I²SL Meeting at AIA 2009 National Convention
Discussion of the Laboratory Facility Guidelines for Planning and Design
April 30, 2009

WELCOME AND INTRODUCTION OF PROJECT MANAGEMENT COMMITTEE

Richard L. Hayes, American Institute of Architects (AIA) welcomed everyone to the meeting. He noted that the Laboratory Facility Guidelines for Planning and Design (Guidelines) project will be a democratic process. The project is being nurtured through collaboration between AIA and the International Institute for Sustainable Laboratories (I²SL). AIA and I²SL, along with BBH-Design, have been working for more than a year to set the foundation for the project. The goal is to develop a new iteration of the 1999 AIA Guidelines for Planning and Design of Biomedical Research Laboratories. Richard's hope is that the end document will have a great impact on sustainability and integrated practice.

The group's plan is to start with the 1999 AIA Guidelines for Planning and Design of Biomedical Research Laboratories and expand those guidelines to include other laboratory types and specifically incorporate the goals of the Laboratories for the 21st Century (Labs21[®]) program. Addressing concerns for energy and environment will be an important theme of the new guidelines.

PROJECT CONCEPT AND JUSTIFICATION

Dan Hightower and Douglas Hall at BBH-Design have been working together to design research and healthcare facilities. One of the key documents for designing laboratories is the 1999 AIA Guidelines for Planning and Design of Biomedical Research Laboratories. The 2006 Guidelines for the Design and Construction of Hospitals and Health Care Facilities are also being used in healthcare facility design. This document takes a different path by starting with overall healthcare facilities and breaking down by chapter different healthcare facility types.

Dan and Douglas wanted to provide the research lab community a resource similar to the healthcare guidelines that addresses human health, what the built environment means, and how can it all be done in a sustainable way to minimize consumption of natural resources. No document like this currently exists.

This meeting will offer a sharing of the concept of this idea.

Dan and Douglas have presented the idea for a laboratory design guide at previous Labs21 conferences. They formalized a notion to begin working toward developing the Guidelines in 2007 with AIA and I²SL.

In 2009, AIA and I²SL signed a Memorandum of Understanding (MOU) to move the project forward.

Why begin this project now? MOU is in place, global opportunity exists, we are more interconnected in a sustainability perspective, and we need a baseline upon which to create these facility types.

Who should be involved? People dedicated to the cause of research: owners, designers, builders, A/E community, professional organizations, and public agencies. All of these groups have an understanding that can be used to create a knowledge base for creating guidelines for sustainable design.

For this document, lessons learned from the original already developed guidelines will be important. For example, technology is being used more now than it was when the original document was created.

REVIEW OF PROJECT ORGANIZATIONAL PLAN

Currently, the following groups are planned to develop the Guidelines:

- Project Board – Project management level committee that will take on responsibility of day-to-day activities.
- Project Oversight Committee – represents owners and large industry representatives, nonprofits, and federal sector involvement within an advisory committee. Possibly 6 members. People who have an interest in concept of the Guidelines.
- Advisory Committee – created so federal representatives could be involved. Could include federal and state representatives, anyone who cannot participate in a board.
- Eastern Research Group, Inc. (ERG) is contractor to I²SL to coordinate logistics.
- Executive Committee – those who want to take leadership and responsibility for some portion of document.
- Steering Committee – Identified by Executive Committee to draft sections of document.
- Revisions Committee – Will assist with development of Guidelines through writing, review, or suggestions for improvement.

The Guidelines are intended to be a living document, so reviews would happen on any of the chapters or sections on a regular basis.

REVIEW OF PROPOSED PROJECT ACTIVITIES AND SCHEDULE

This meeting is part of phase one of the overall plan for the document. The objective of the meeting is to assign project roles.

This is the first meeting of potential committee members. The second meeting will take place at the Labs21 2009 Annual Conference in Indianapolis, Indiana. Before the second meeting, the group hopes to further develop document concept.

Big picture is to approach AIA and Labs21 conferences knowing that many committee members or potential committee members will attend.

COMMENTS/QUESTIONS

Groups that need to be represented:

- Standards and regulatory organizations - OSHA, American Conference of Government and Industrial Hygienists (ACGIH), American Industrial Hygienist Association (AIHA), National Institute for Occupational Safety and Health (NIOSH)
- Scientific bodies – American Chemical Society (ACS), American Association for the Advancement of Science (AAAS), American Association for Laboratory Animal Science (AALAS), or other institutions that could provide buy in.
- State representatives – hope that these representatives will be at oversight committee level to guide process.
- Owners and Users – biomedical research is vastly different than what it used to be. Without knowing what's going on in a laboratory, we won't know how to plan for the future.
 - Synthetic biology
- Need to have a central knowledge base for designer, researcher.

Delivery mechanism for document is being considered – options for ways it can be easily accessible and readily updated.

Dan Hightower and Dick Rittleman worked on first biomedical document.

There is a need for greater attention to integration of laboratory design and laboratory equipment. Determining what all of the technical, spatial, and operational requirements are has been a growing challenge. Guidelines need to pay particular attention to research equipment integration.

Guidelines should incorporate ASHRAE laboratory energy and operational efficiency standards and safety requirements. ASHRAE representative should be invited to join Oversight Committee.

Everyone is encouraged to provide names of people that could be invited to participate in this project. *(Please provide names to labs21@i2sl.org.)*

Guidelines should interface with building automation system and laboratory controls. Jim Coogan, Siemens would be a good person to participate in Oversight Committee because of his knowledge in this area.

With new LEED® standards and advanced commissioning, Carl Lawson, vice chair in developing new ASHRAE commissioning guidelines, would be a good asset.

Ideas for Topics to Cover:

- Renovated laboratories
 - Develop a protocol for moving a laboratory
 - Develop a protocol for decommissioning a laboratory
- Need to define “laboratories.”
- Synthetic biology

PROPOSED SCOPE FOR THE GUIDELINES

Matrix was created to figure out what should be covered in the Guidelines. The matrix is split into education, research, and industrial sectors. Purpose of this meeting is to begin populating matrix.

Animal facility information was not included in original guidelines, but is included in new version.

Purposely excluded items from original list:

- Janitors closets
- Loading docks
- And other elements that include security aspects

These items will be included later.

Vibration control/vibration environments are becoming more critical in research. Very little is available on this topic. The Guidelines provide an opportunity to advance state of topics.

Building does not come with a user's manual. Idea is that people understand what the building can handle as far as energy and water is concerned as well as how the building performs.

Getting something written is going to be critical. What can be done within budget and timeframe? Need to determine what a design guide is, and the potential benefits of the design guide.

Stick to original task: Guidelines for design of facilities.

Funding from NIH is going away from individual who ran an autonomous laboratory toward tertiary laboratory construction. If you design one way, and operate it another, it can be chaotic.

If we stay focused on the design of the laboratory and use good management, safety, energy, and make those part of what influences our recommendations for design, then that will help inform the management process and will be a part of the users benefit. Don't want to make this a handbook for the management of laboratories.

Show them how to build a type of laboratory, and then show what that laboratory's limits are. A "cereal box panel" type of labeling could be considered as a means to ensure the facility meets the designed, engineered, and sustainable objectives for the laboratory.

Matrix 1

Improve by including:

- Animal facilities
- Agriculture
- Forensics
- Institutional - should be separate from Industrial/Commercial
- Translational medicine – from bench to bedside
 - Post-mortem medical research institutes are doing this already

Matrix 2

Guidelines would be helpful in bringing people to a common understanding of what constitutes best practices and the importance of sustainability.

Does it matter that the facility is broken down by client?

- Community dynamic and active environment – universities may be different than corporate, industrial, etc.
- Value in making the matrix this way is to gather all of the information and then evaluate it.

Responsibility is to have customers understand difference between a flexible laboratory and one that is not flexible.

It is always difficult to develop taxonomies. Primary purpose is to write manual – focus of matrix should be in direction of categories. This way there will be differences between categories.

Categorize buildings by function rather than institution type. Any institution may have an entire series of functions.

Project Management Committee will develop definitions for humane factors group.

Grid axis should be carefully thought out and vetted by group before group dives into project.

Send any additional comments to I²SL's contractor, Shannon Stanley at ERG: shannon.stanley@erg.com.

Excel documents will be added to the Web page so that people can download the file and make changes. Changes should be sent to shannon.stanley@erg.com.

Meeting summary will be distributed. Please respond with comments to start a dialogue.

Next Steps

Group will meet again at the Labs21 2009 Annual Conference in Indianapolis, Indiana, September 22 – 24.