A PROCESS-ORIENTED APPROACH TO LABORATORY DESIGN
for Laboratory Leaders and Programs

The Laboratory Design Workgroup of the APHL Global Health Committee is working to create a reference guide for laboratories—particularly in developing countries—that presents a logical step-by-step process of laboratory design that can be applied to new buildings as well as renovations. The guidance document will help ministries of health and laboratory leaders think holistically about laboratory needs, functions and sustainability by engaging in the process outlined below:

Vision, Project Team & Buy-in
- National, Regional and Local Planning
- Mission/Vision
- Master Planning
- Workforce Staffing Plan
- Funding

Project Team
- Project Sponsor
- Steering Committee
- Core Team
- A/E Team

Buy-in
- Purpose
- Project Charter
- Business Case

Concept Development
- Principles of Lab Design
  - Design Concepts
  - Support of Safety Protocols
- Concept Development
  - Establish Goals, Wants & Needs
  - Risk Assessment
  - Functional Requirements
  - Basis of Design
  - Analyze Solutions
  - Cost Estimates

Implementation
- Engineer Selection
  - Establish Selection Committee
  - Establish Bidding Process
- Design
  - Documentation of Functional Requirements
  - Safety Protocol Support
  - Workflow
  - Budget
- Construction & Oversight
  - Construction Plans/Documents
  - Bidding and Selection of Construction Company
  - Procurement
  - Construction Oversight
  - Handover/Commissioning

Operation & Maintenance
- Operations & Maintenance Manual
- Access
- Budget
- Availability of Materials and Supplies

Sustainability and Safety (utilized throughout the process)
- Power Supply
- Water Supply
- Natural Ventilation
- Air Conditioning
- Decontamination
- Waste Streams
- Budget

Laboratory Safety
- Decontamination
- Safety Manual
- Risk Assessment
- Biosafety Cabinet Placement & Certification

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