Toolik Field Station

Laboratory Design

Objectives and Process

Science Support Vision Workshop
August 2012

CH2MHILL
Polar Services

Design Process Overview

Listen and Learn: Identify Laboratory Users and Activities of All User Groups; Brainstorm Needs, Preferences, No-no's

Collate Data: Scientist Needs, Space Needs, Equipment Requirements, Winter/Summer Considerations, Site

Integrate Health and Safety Concerns: Building Systems, Life-safety Code, Ergonomics, Sustainability

Schematic Diagrams to Final Design: Bubble/Adjacency Diagrams through Final Design Bid/Construction Docs

Reviews and Feedback: Solicit Comments from Stakeholders

Value Engineering: Reconcile Design with Known Budget

Engage TFS Science Users for Charrette

XXX (Gus Shaver)
XXX (Breck Bowden)
XXX (Mike Weintraub)
XXX (Brian Barnes)
XXX (Sally McIntyre)
XXX (Mike Gooseff)
XXX (Tamara Harms)
XXX (Callum Anderson)
XXX (Greg Starr)

Survey Existing Laboratory Facilities

Weatherports, Buildings, Other Structures: Square Footage, Evaluate Suitability for Future Science Use, Re-purpose for Non-Science Uses, Relocate, Decommission

Unheated Storage / Heated Storage: Quantify, Allocate

Equipment Slated for Re-Use: Inventory of Specs and Power/Water/Data Usage

Special Systems: Gases, Plumbing, Filtration

Explore Shared Laboratory Space
vs.
User-Dedicated Laboratory Space

MAXIMIZE

Budget: First-Cost and Life-Cycle Cost

Efficiencies: First-Cost/Life-Cycle Cost, Power/Water Use, E-Connectivity, Space, Storage

Flexibility: Consider Evolving Science Needs in the Long Term

Detailed Laboratory Programming - Topics

Laboratory Space: Seated Workbench, Standing Workbench, Daylighting and Black-out, Lay-out Space, Animals, etc.

Office Space: Shared vs. Private

Storage:

Unheated – Field Equipment, etc.
Heated – Proximity to Laboratory Space
Common Use or Dedicated Space
Large and Bulky, Small Items
Resources and Manuals, etc.

Equipment:

Large - Refrigeration, Drying Ovens, Ventilation Hoods
Small – Centrifuge, etc.

Plumbing: Sinks, Compressed Air, Gases, RO Water, Waste Systems