

UNIVERSITY OF CALIFORNIA, MERCED
2020 PROJECT
MARCH 2019



UNIVERSITY OF CALIFORNIA
MERCED

SOM

DESIGNING ELEMENTS OF A TRANSFORMATIVE IDENTITY IN HIGHER EDUCATION INSTITUTIONS

Developing a **transformative identity** to attract new students and generate community support

Designing learning environments to foster **connection and interaction** within the institution and beyond

Reinforcing existing **pedagogical intent** while preparing for the needs of future users

Articulating the **goals and vision** for a site that can be executed through design

UC MERCED 2020 PLAN



2005



2020 MASTER PLAN

UC MERCED 2020 PLAN

PROJECT LIST

FALL 2018 - FIRST DELIVERY

Housing 1A/3B: Undergraduate Residence Hall with Classrooms and multi-use student organization and activity space

Housing 1B: Undergraduate Residence Hall with Classrooms and multi-use student organization and activity space

Dining 1D: Multipurpose Dining Facility

Loading Dock 1H: Below ground shared loading dock

FALL 2019 - SECOND DELIVERY

Lab 2A: Wet laboratory building

Lab 2B: Dry computational laboratory building

Research Server 2D: Research server

Soccer Field 2E: Competition Outdoor Field

FALL 2020 - SUBSTANTIAL COMPLETION

Lab 3A: Wet and dry laboratory building

Lab 3A2: Research greenhouse

Housing 3C: Undergraduate residence hall

Housing 3D: Undergraduate residence hall

Early Childhood Education Center 3F: Expansion of Early Childhood Education Center

Conference Center 3G: A multipurpose conference center for students, faculty and staff

Academic Leadership Office/Student Enrollment Center 3H: A student enrollment center, campus store, gallery and academic leadership office

Competition Swimming Pool 3K

Wellness 3M: A student wellness center, which includes space for counseling, disability and psychological services

Facility 3N: Two Outdoor Recreation Fields

DELIVERY METHODS



Design-Bid-Build Characteristics

- University retains risk – finance, construction, operations
- Does not tie financing/construction/operations to initial project solicitation
- Requires less program definition – program spaces/requirements developed during Concept Design/Programming Phase
- Allows University control over both the Technical Performance Criteria and Program requirements and how those requirements are met.



Design-Build Characteristics

- Transfers construction cost risk to Design-Builder
- Does not tie financing/operations to project
- Prior to solicitation requires detailed programming and technical performance criteria
- University controls performance criteria but not how it is met
- Limits change orders to University initiated changes
- Anything missed in initial programming/technical criteria may result in change order



P3 Characteristics

- Transfers construction cost, financing and operations risk to Developer
- Ties financing to project
- Prior to solicitation requires detailed programming & technical performance criteria
- Limits change orders to University initiated changes
- Anything missed in initial programming / technical criteria may result in change order
- Financing typically restricts University ability to add/deduct project costs
- UC Merced selected this method to secure necessary financing to enable the campus to develop several facilities at one time and mitigate future unfunded deferred maintenance liabilities

ELEMENTS OF A P3 PROJECT

Clear and executable building program requirements

Develop an inventory of generic space types

Outline the technical and performance requirements for each space type

Anticipate potential design solutions to written program requirements

Architect/Contractor teams bid the inventory of space types based on their performance requirements

Develop a process to address inevitable changes and/or omissions in the program or performance requirements

Develop a process to define and address changes after construction documents are finalized and occupants are known

ELEMENTS OF A P3 PROJECT



WRNS & WT Partnerships

DEVELOPING THE P3 PROGRAM AT UC MERCED: YEARS OF UC MERCED INTERNAL DISCOURSE

Enrollment was growing more quickly than state funding for capital projects.

2013 charrettes and user interviews with all campus stakeholder groups

2014 “Wish List” synopsized campus discussions

April 2014 RFP Issued

August 2014 Program Reviews & Refinements through continued discussion

- Creation of research communities in otherwise generic academic buildings
- Distributed student services in mixed use classroom and housing buildings

Fall 2014 Cost estimation and financial modeling

Leadership Summit, December 2014 Decisions were made to defer some program elements to post 2020 (although still master planned)

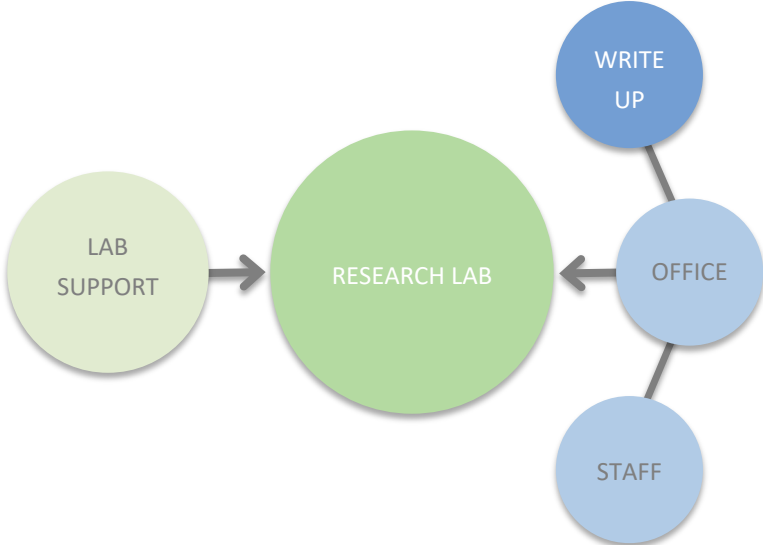
2015 Bid proposals and contract negotiations

2016 Largest P3 project in U.S. higher education was signed among UC Merced/Plenary/Webcor

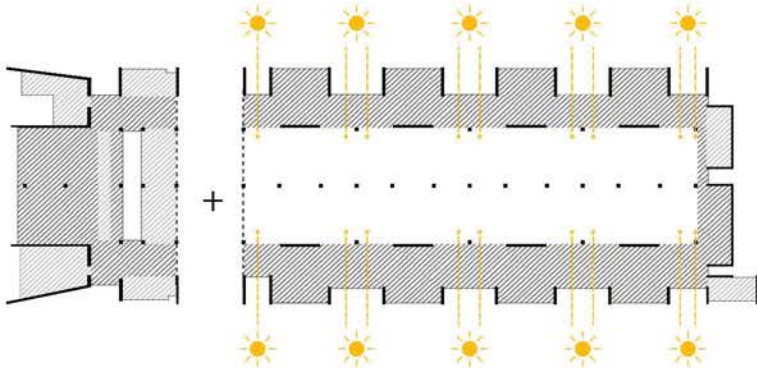
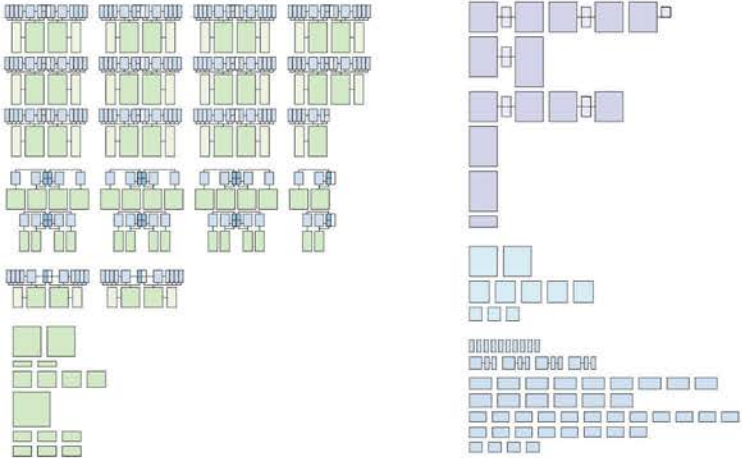
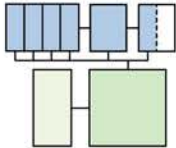
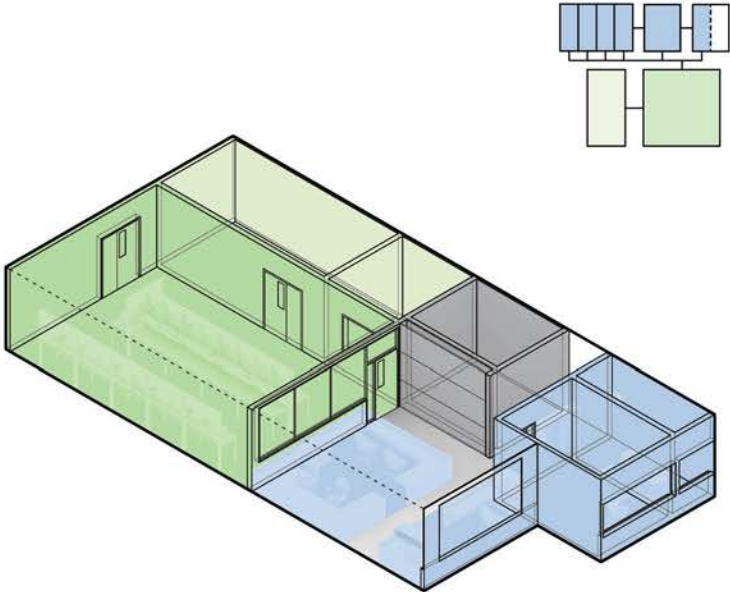
Following years of discourse only 11,000 sq ft of academic space was deferred



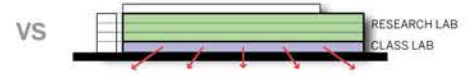
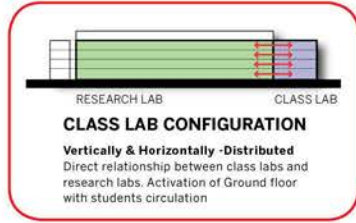
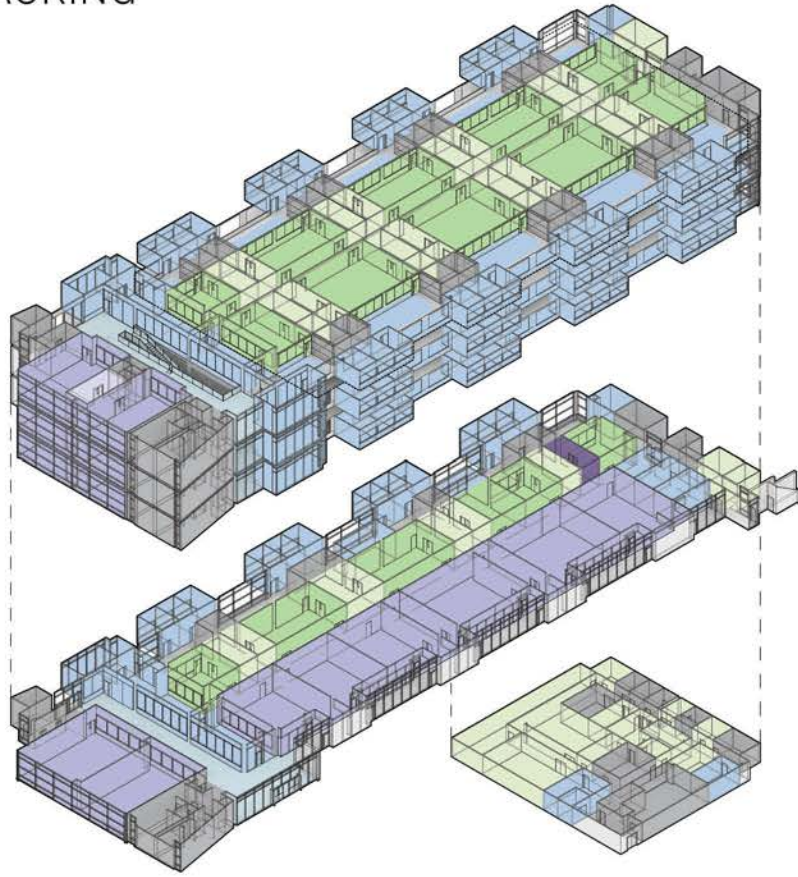
BUILDING COMMUNITIES
RESEARCH PROGRAM APPROACH



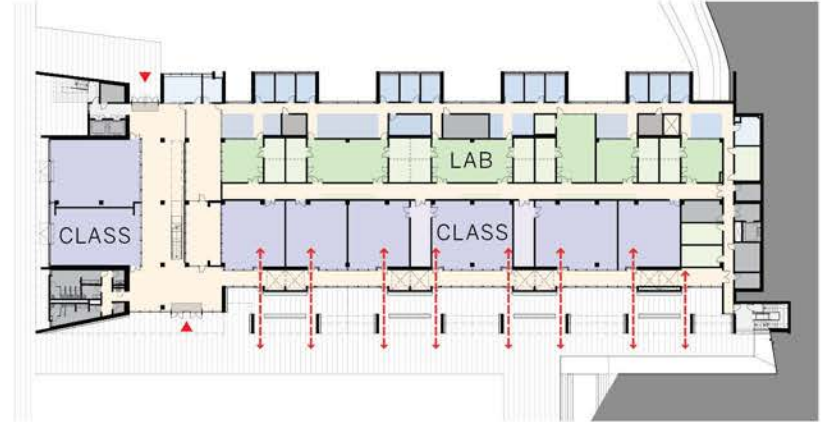
PROGRAM COMPONENTS & MODULE



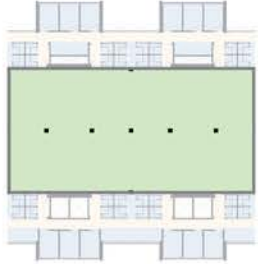
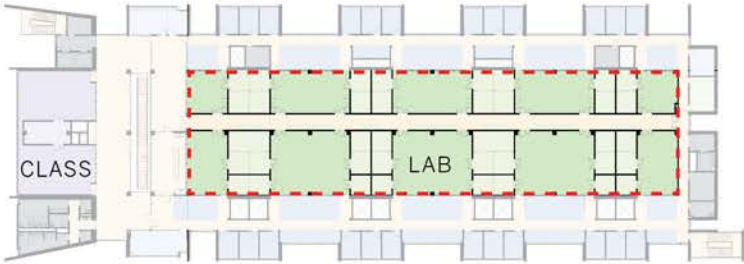
STACKING



Horizontally-Distributed
Class labs activate building base
Greater privacy for research labs



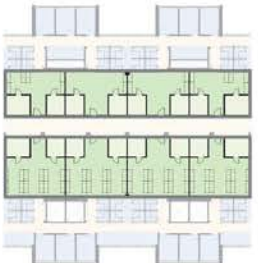
TYPICAL LAB BAY & ATTRACTORS



FLEXIBILITY

PROGRAM

ALTERNATE BENCH



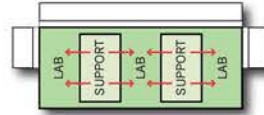
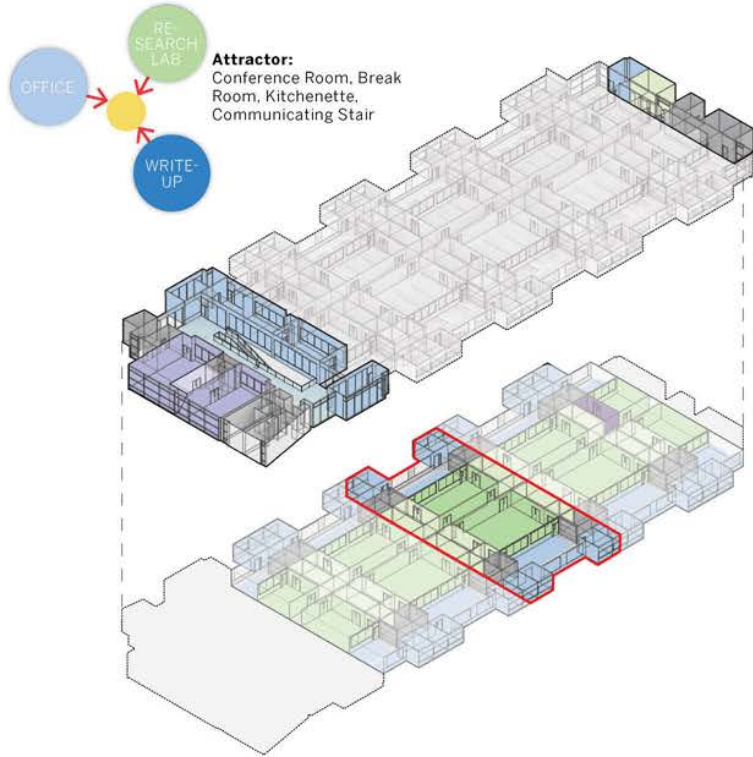
LAB EXPANSION

LARGE LAB

CONTINUOUS BAY

BUILDING COMMUNITIES

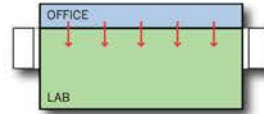
RESEARCH PROGRAM APPROACH



LAB CONFIGURATION

Alternating

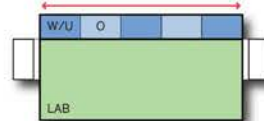
Creates an intimate and neighborhood-like feeling for research communities



OFFICE & LAB

Linear

Direct relationship between offices and labs
Creates separate identities for Principal Investigators



OFFICE , WORKSTATION & LAB

Alternating

Integrated relationship between Principal Investigators and graduate student researchers

VS



Linear

Provides an open plan
As length increases, scale of laboratory becomes impersonal

VS



Hub

Indirect relationship between offices and labs
Fosters a collegial environment among Principal Investigators

VS

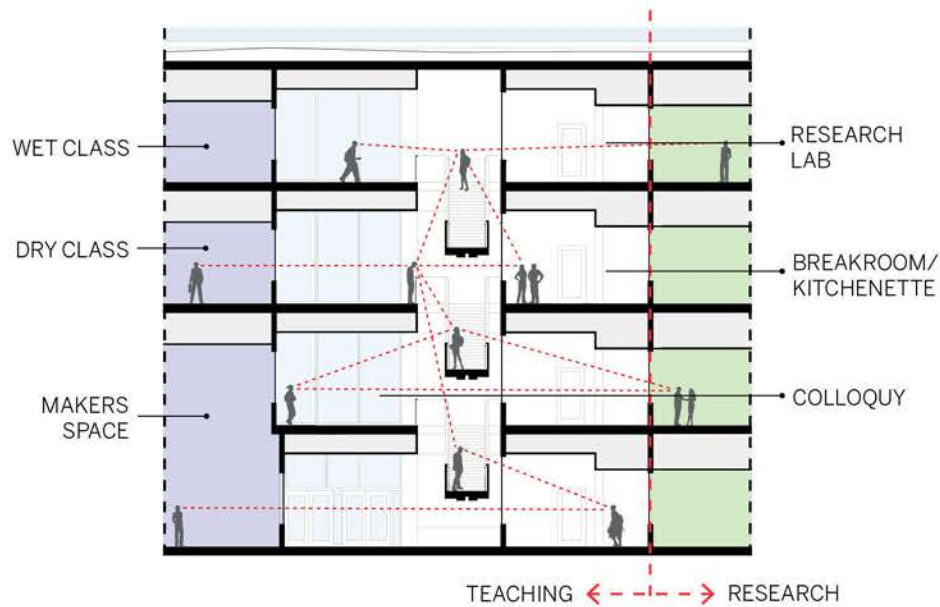


Segregated

Individual work spaces kept separate: Principal Investigators and graduate student researchers mix in labs



SHARED SPACES



EXTERIOR VIEW



PROMOTE INTERDISCIPLINARY AND CROSS-PLATFORM COLLABORATION



"The 2020 Project Program seeks to **break down silos** to create a more holistic campus where **living and learning occur 24 hours a day** regardless of where students are at any given time and where student-faculty interactions and faculty interdisciplinary **interactions occur spontaneously.**"

SPACE ALLOCATION PLANNING: CRITICAL PART OF THE PROCESS

Strategic Planning: Developing a community dialog

Finding common goals

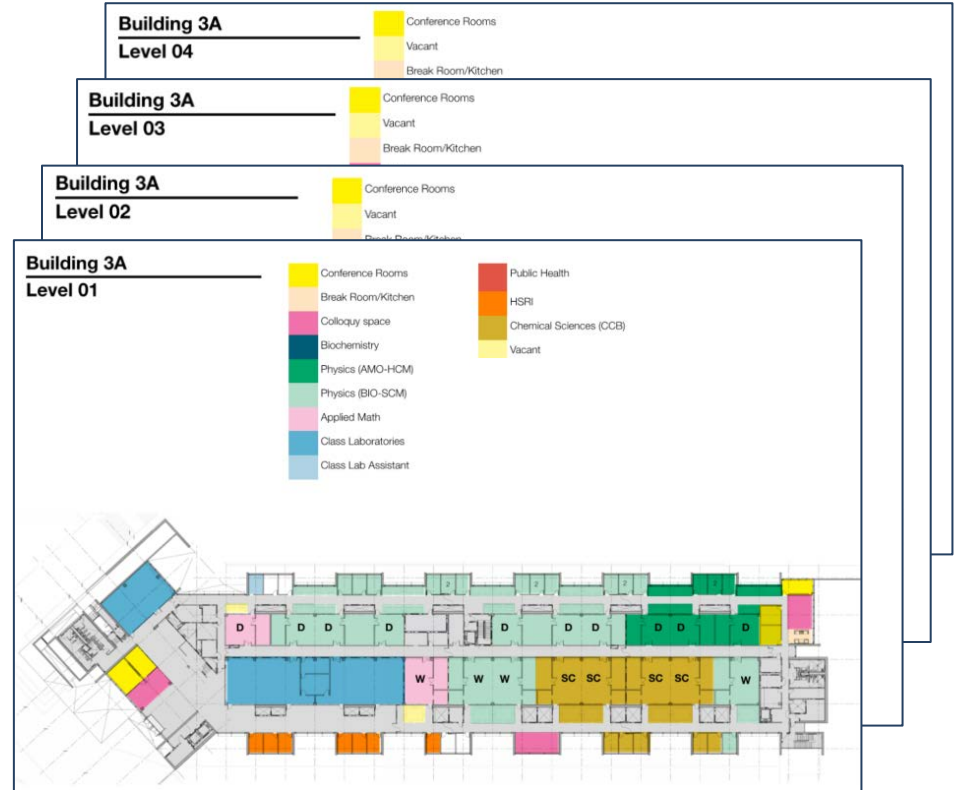
- Faculty Retreat
- Faculty and Staff Dialogs
- Individual and departmental meetings
- Iterative Community review process

Setting principles

Brokering and consensus building

Moving from Generic to Specific

Integrating space assignment into the project schedule

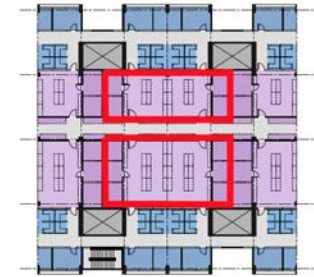


DESIGN DILEMA & SOLUTION: LAB RETROFIT DESIGN PROCESS

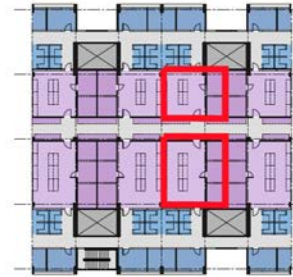
- Flexibly designed labs
- Incorporating the principles of the space allocation plan
- Iterative conversations with the researchers
 - Stakeholder Review
 - Space Allocation Discussions
 - Departmental meetings
 - Individual & Research Group lab design meetings
- Education
 - Budget
 - P3 Constraints
 - Design Constraints
- Rehiring the general contractor
 - Partnering: retrofit pricing & schedule
- 35 years of O & M and alignment with the academic research enterprise
 - Selective assignment of O & M costs
 - Annualizing the O & M costs
 - Future grant funding



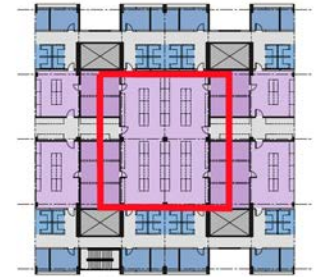
1. Flexibility



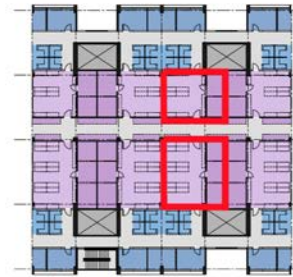
4. Lab Expansion



2. Program Size



5. Large Lab

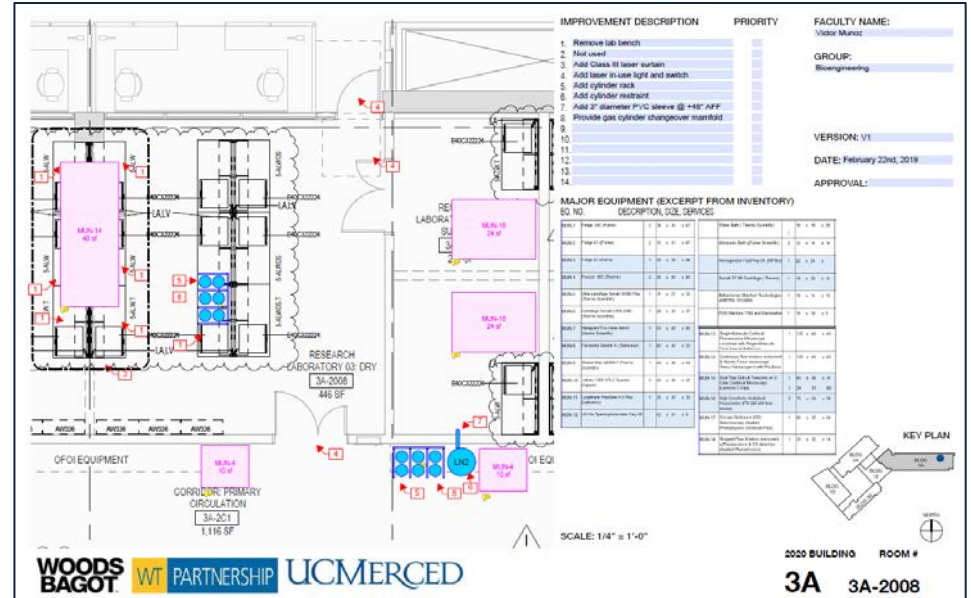
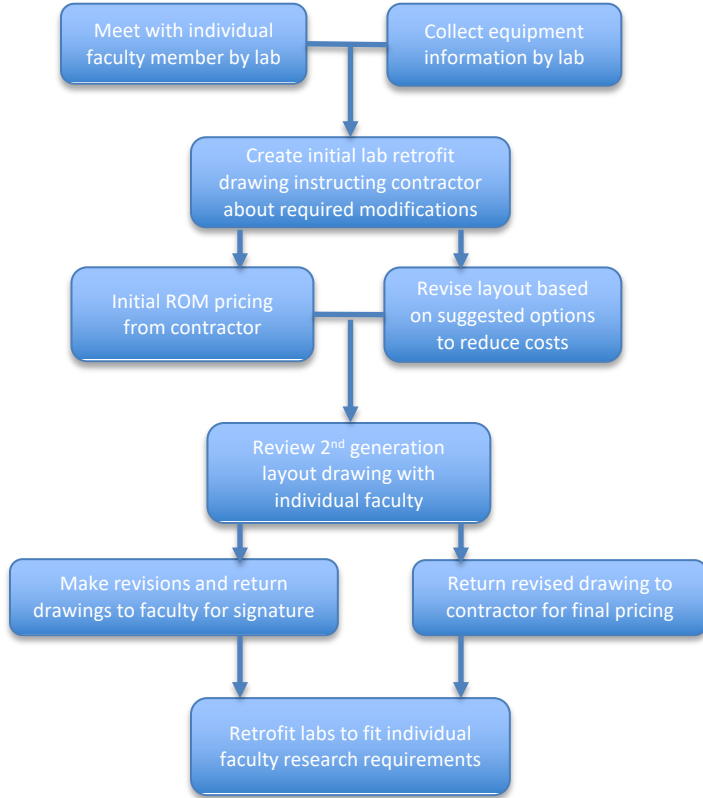


3. Alternate Bench Arrangement



6. Continuous Bay

LAB RETROFIT DESIGN PROCESS



ADAPTING THE P3 MODEL TO RESEARCH LAB BUILDINGS

- Is there really such a thing as a generic research lab? Or is flexibility in design really the key characteristic?
- Anticipate the continual retrofit process that occurs in research labs – what is that process?
- Detailed performance specifications are even more important for the specialized spaces – e.g. vivarium, BSL3/ABSL3 High Containment Lab
- A complicated legal, contractual process for resolution of design issues undermines the design process and schedule
- P3 O&M model does not align with the academic research paradigm





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SKIDMORE, OWINGS & MERRILL LLP

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Thank you for your time

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Danielle McGuire, SOM

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