river ARCHITECTS

University of Wisconsin – La Crosse
SCIENCE LABS BUILDING – PHASE 2
DFD# 13B3H-02 / RA# 1290.B
September 13, 2017

PROGRAM VERIFICATION MEETING NO. 1 – BIOLOGY / SEPTEMBER 13, 2017

MEETING START TIME: 10:30 a.m.
MEETING END TIME: 12:30 p.m.

PRESENT:

University of Wisconsin – La Crosse		
Scott Schumacher	Planning & Construction	sschumacher@uwlax.edu
Mike Abler	Biology	mabler@uwlax.edu
Amy Cooper	Biology	acooper@uwlax.edu
Kurt Grunwald	Biology	kgrunwald@uwlax.edu
Megyn Litster	Biology	mlitster@uwlax.edu
Jennifer Doktor	Physics	jdocktor@uwlax.edu
Tom Volk	Biology	tvolk@uwlax.edu
Elisabeth Paluch	Biology	epaluch@uwlax.edu
Anton Sanderfoot	Biology	asanderfoot@uwlax.edu
Design Team		
Mike Adler	River Architects	m.adler@river-architects.com
Jeff Kocinski	SmithGroupJJR	jeff.kocinski@smithgroupjjr.com
Marilee Lloyd	SmithGroupJJR	marilee.lloyd@smithgroupjjr.com

NOTES:

1. The Vivarium was reviewed and discussed with Amy Cooper. The following items were noted:
    a. No large animals. Rodents to rabbits. Rarely will have birds.
        - Static racks, bottle watered.
    b. NIH Guidelines to be followed.
    c. Amy highlighted the list of rooms and distributed a plan sketch and various requirements.
    d. Added room: Cage Storage Room – (1) @ 480.
    e. Added room: Procedure Room – (1) @ 480.
        - Break into three spaces
            - Surgery
            - Necropsy
            - General procedures
        - Procedure hood
    f. One less animal room is needed.
    g. Added room: Quarantine (same size as a typical holding room)
    h. Added Room: Barrier Room
    i. Added room: Hibernacula: hibernation room required for ground squirrels Same size as a typical holding room.
    j. Cage Wash
        - Clean side
        - Dirty side
        - Rack washer

- 4 runs per week
- 20-35 cages per rack, depending on size of cage/animal type
- Please send information on the current cage washing/sterilization equipment.

k. Added room: Storage Room
- Feed, bedding, and supplies

l. No floor drains in animal rooms
- Microfiber mops used

m. Added room: Custodial Closet

n. Added rooms: Restroom
- Lockers and shower – either located within the vivarium or outside of the suite.

o. Generator – It was noted that the Vivarium MEP systems and cage support should be on Standby power.

p. Stand-alone HVAC system

q. Noise and vibration control required
- Isolation required from mechanical vibrations, shop, etc.

r. Oxygen, CO2 will be in use in Procedure rooms.

s. RO water potentially needed in Animal spaces.

t. Animal Rooms
- 1 room per specie
- 1 extra for misc. projects

2. The Shop was reviewed and discussed with Kurt Grunwald. The following items were noted:
   a. Clean Side (optics, microscopes, etc.) (40%)
      - 3d printer
   b. Dirty Side (wood and metals) (60%)
      - Double doors or 4'-6" offset lab doors
      - 220v needed
      - Table saw, miter saw, lathe, etc.
      - CNC machine, printer
      - Hand wash station
      - Dust collection system needed
      - Air handling system for fumes is needed – point exhaust possible solution
   c. Basement location would be acceptable

3. The Science Education Methods was reviewed and discussed with Megyn Litster and Jennifer Doktor. The following items were noted:
   a. Physics 106 also taught in this room (30 students)
   b. Life science teaching for elementary biology – outfitted for biology lab
   c. Research space
      - Separate space from methods lab
      - Separate entrance with access control
      - Power & data
      - Storage
        - Mobile cart for iPad storage
        - Microscopes
   d. Near Math Education faculty
      - Share resources

e. Resource Area
   - Computers
   - Resources
   - Needs to be bigger than 160sf
     - 4-5 students
     - Proposed 320sf

f. Lab/Classroom Space
   - Movable tables
   - Power & data from floor or Wi-Fi
   - Water at perimeter
   - Groups of 3 (10 groups of 3 currently)

g. Prep Space
   - No fume hood required

4. The Greenhouse and Herbarium were reviewed and discussed with Tom Volk and Elisabeth Paluch. The following items were noted:
   a. Bio safety cabinet needed for Medical Mycology
   b. Medical Mycology – currently just over 1,000sf – includes safety cabinets
      - Concerns about the two mycology types
      - Additional specimen storage needed
      - Ideally – a prep space adjacent to lab is needed
   c. Greenhouse
      - Sponsorship opportunity
      - Increase size
      - Gathering space/showcase
      - Divided into two spaces – classroom and display
      - Ground level preferred
      - 820sf currently in greenhouse with all spaces
      - "Headhouse" = greenhouse prep
      - Aquatics area would be ideal to have
      - Isolation room – only 1 needed
        - Move the saved 320 to classroom type space within the greenhouse
      - Biology to provide adjacency diagram
      - Environmental controls required – automated ventilation controls
      - Interior screen to control sun

5. The Biology Department space program was reviewed and discussed with Mike Abler. The following items were noted:
   a. Collaborative Learning Space
      - Provide place for students to continue analyzing work outside the lab
   b. Department Chair office could be larger per Scott Schumacher. Mike Abler advised to leave it programmed at 120.
   c. 30 ranked faculty.
   d. 2 future offices.
   e. 9 full time lecturer offices.
   f. 1 part time lecturer office.
   g. ADA – 80sf is the work space or actual desk area.

h. Teaching Assistants – change to 12 spaces.
i. Grad Students – change to 12 spaces.
   - Could be in an open area or shared space of 2-3.
j. Lab Support Staff approved as indicated.
   - Location should be closer to rest of departmental space, not the labs. If more space is needed in the office wing for other functions, these would be the offices to relocate.
k. Work Room – 240sf approved as indicated.

6. Classrooms were reviewed and discussed with Mike Abler. The following items were noted:
   a. Largest Biology courses are Bio 312 & 313 which require 120 to 130 seat lectures but would like to keep under 100 if possible.
   b. Consider converting two 120 seat classrooms to 80 seat active learning style classrooms.
   c. 40 to 56 seat classrooms – 8 currently – Mike suggests increasing.
   d. 24 to 32 seat classrooms – only used for capstones or a few electives – too small for Biology.
   e. Active Learning
      - Group horseshoe arrangements preferred per Mike – 4 to 6 per group
      - 80+/- students

7. The Specimen Museum was reviewed and discussed with Mike Abler. The following items were noted:
   a. Area as allocated is sufficient.
   b. Should include displays to demonstrate animal behavior.
   c. Needs to be located in a public setting.
   d. Also need storage/display throughout the building.

8. The current space tabulation with edits made during the meeting is included on the following page for review.

Meeting Notes by: River Architects

This constitutes our understanding of the issues presented. Contact River Architects, Inc. via phone at (608) 785-2217, or e-mail m.adler@river-architects.com if there are any discrepancies.

Department	Space Type	UNIT NO.	UNIT	NO. OF OCC	ASF / OCC	ASF / SPA	NO. OF SPACES	TOTAL ASF	PHASE 2	PH2 - PV1 LAB NOTES
Biology	Office	3A	Department Chair's Office	1	120	120	1	120	120	
Biology	Research	3AA1	Greenhouse: Greenhouse			1,280	1	1,280	1,280	
Biology	Research	3AA2	Greenhouse: Headhouse			160	1	160	160	
Biology	Research	3AA3	Greenhouse: Aquatics Space			160	1	160	160	
Biology	Research	3AA4	Greenhouse: Isolation Space			320	1	320	320	
Biology	Research	3AB1	Specimen Museum: Display Specimen			640	1	640	640	Bigger?
Biology	Research	3AB2	Specimen Museum: Specimen Non-Display			320	2	640	640	
Biology	Research	3AB3	Specimen Museum: Office Area			60	1	60	60	
Biology	Research	3AB4	Specimen Museum: Rock Collection			160	1	160	160	
Biology	Research	3AB5	Specimen Museum: Table and Chairs			750	1	750	750	Students and visitors
Biology	Office	3B	Ranked Faculty Office	1	120	120	30	3,600	3,600	
Biology	Office	3C	Future Ranked Faculty Office	1	120	120	2	240	240	
Biology	Office	3D	Lecturer – Full Time	1	120	120	9	1,080	1,080	
Biology	Office	3E	Lecturer – Part Time	1	120	120	1	120	120	
Biology	Office	3F1	Academic Department Associate	1	80	80	2	160	160	
Biology	Office	3F3	Student Workers	1	35	35	2	70	70	
Biology	Office	3F4	Reception Area	6	25	150	1	150	150	
Biology	Office	3F5	Storage Cabinets			12	1	12	12	
Biology	Office	3F6	Lateral Files			66	1	66	66	
Biology	Office	3G	Secure Office Storage (4 storage cabinets)			120	1	120	120	
Biology	Office	3H	Workroom			120	2	240	240	1 bigger space? 1 copier, maybe 2 printers
Biology	Office	3I	Teaching Assistants	1	120	120	12	1,440	1,440	Need space to talk to students
Biology	Office	3J	Graduate Students	1	120	120	12	1,440	1,440	in open office space now, shared office or open
Biology	Office	3K	Lab Support Staff	1	120	120	3	360	360	
Biology	Instructional	3P	Botany and Medical Mycology Lab			1,280	1	1,280	1,280	
Biology	Instructional	3P1	Biosafety Cabinet Room			320	1	320	320	
Biology	Instructional	3P2	Botany and Medical Mycology Lab Support			960	1	960	960	
Biology	Instructional	3S3	Animal/Organismal & Botany Prep/Storage			320	1	320	320	
Biology	Research: Animal Care	3Y1	Animal Rooms	1	120	120	7	840	840	Mice, rats, squirrels, rabbits, birds - 1-2 racks per room (assume 1-5 per room) 20 cages per rack for squirrels, 35 for small cages, mop room no floor drain
Biology	Research: Animal Care	3Y10	Cage Storage			480	1	480	480	
Biology	Research: Animal Care	3Y11	Restroom w/ lockers			200	1	200	200	
Biology	Research: Animal Care	3Y12	Janitors closet			50	1	50	50	
Biology	Research: Animal Care	3Y13	Vivarium Circulation					-	400.00	
Biology	Research: Animal Care	3Y2	Procedures Room			160	3	480	480	Divide into w rooms necropsy, surgery, procedures w/ hood
Biology	Research: Animal Care	3Y3	Cage Wash	1	320	320	1	320	320	clean and dirty side, DW for bottle wash - 2 runs per week
Biology	Research: Animal Care	3Y4	Storage	1	160	160	2	320	320	1 feed, bedding and supply.
Biology	Research: Animal Care	3Y5	Dirty Room	1	160	160	1	160	160	
Biology	Research: Animal Care	3Y6	Lab Manager	1	120	120	1	120	120	
Biology	Research: Animal Care	3Y7	Hibernacula			120	1	120	120	
Biology	Research: Animal Care	3Y8	Barrier Suite			120	1	120	120	
Biology	Research: Animal Care	3Y9	Quarantine			120	1	120	120	
Biology	Research	3Z	Herbarium			960	1	960	960	Near museum?

6.0 Architectural Materials and Finishes

6.1 Functional Areas

Introduction and Background

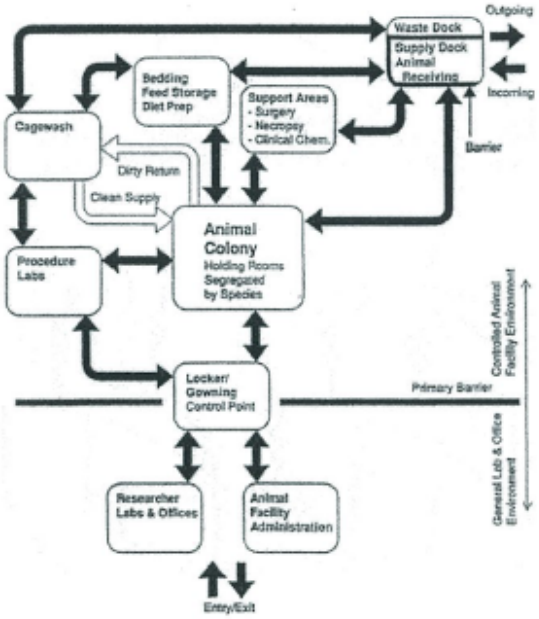
An animal research facility is a specially designed building type. The design and size of the facility depends on the scope of the animal research program, the species to be used, the physical location in relation to the other research areas, and the geographic location. The vivarium must maintain closely controlled environmental conditions and must be designed to protect the research animals from exposure to conditions, pathogens, and agents that could alter research results. Functional areas must be defined in order to develop a well-planned and efficient facility.

Data

1. Functional areas of an animal facility may include:

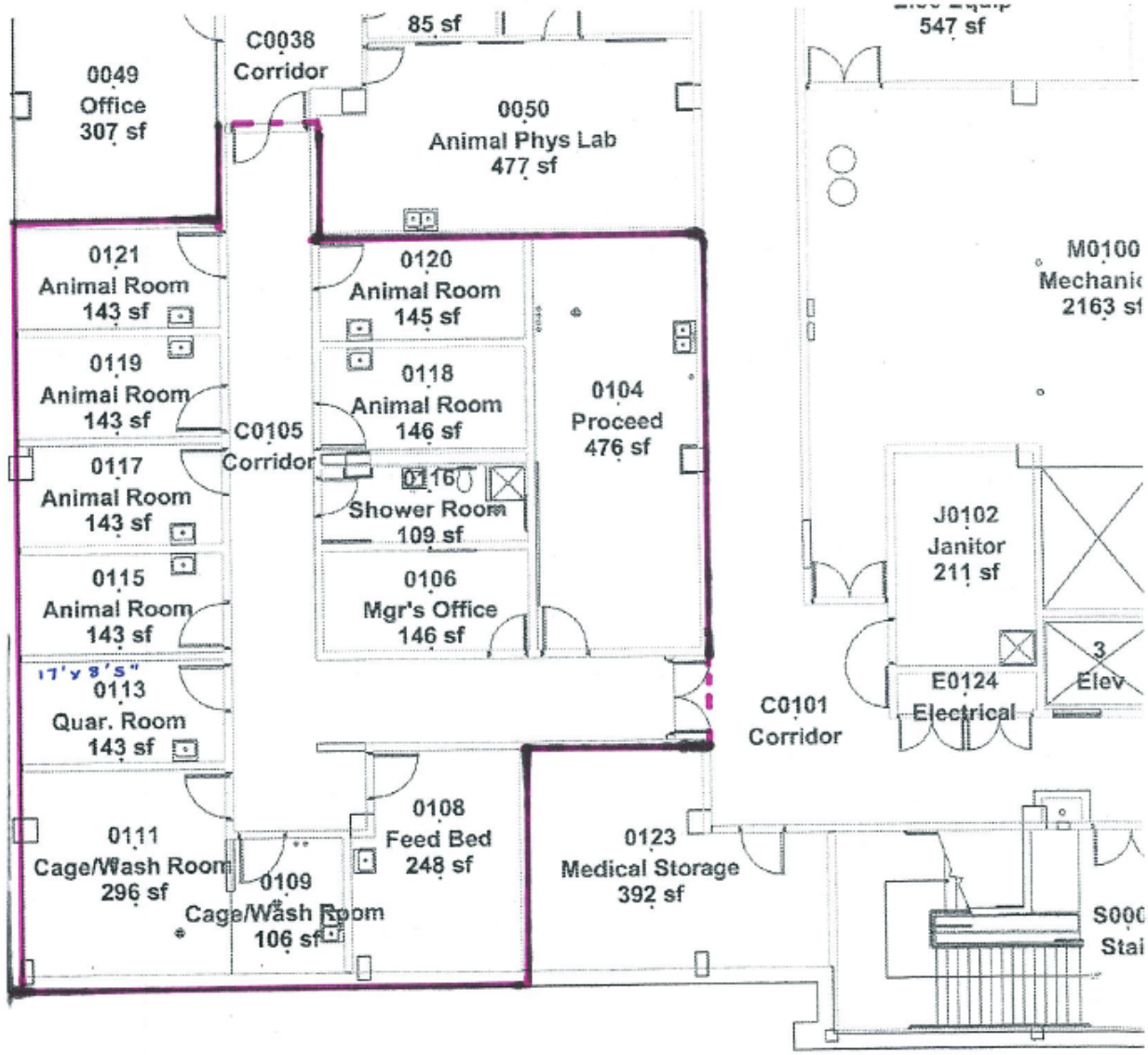
- Animal Housing Rooms (AHRs) - AHRs can be organized as individual rooms accessed from a corridor system or multiple rooms could be organized into self-contained suites.
- Procedure Rooms – procedure rooms should be located within or close to the AHRs. Maximum flexibility is maintained by designing procedure rooms that can be used interchangeably as animal housing rooms, i.e., procedure rooms should be identical to animal housing rooms. Procedure room furniture and fixtures should be modular and mobile, to allow for total room conversion between procedure and housing.
- Barrier Facilities – This area is designed to maintain bio-security for specific pathogen free animals. The rooms operate under positive pressure to keep contaminants out. As in containment facilities, control and monitoring systems and equipment are utilized in barrier facilities to maintain the required pressures and flows.
- Barrier Elements - Airlocks, locker rooms, pass-through autoclaves, pass-through vaporized hydrogen peroxide rooms, etc., provide the primary barrier and access control that separates the controlled animal care environment from external influences.
- Cagewash – The cagewash complex is the central area for decontamination, cleaning, and sanitizing of animal care equipment and supplies. These areas are dominated by equipment-generated heat, moisture, noise, and vibration. The major equipment items include cage & rack washers, tunnel washers, autoclaves, bedding dispensers and dump stations, and bottle filling stations.
- Cage Storage – Storage space is required for items that are used in daily operations, such as staged or processed cages, bottles, racks, carts, etc.
- Feed, bedding and equipment storage – This storage area should be located to facilitate operational flow. Appropriate separate storage areas for these and other items should be included.
- Quarantine – A specialized containment area is needed to house incoming animals that could be a source of infection. This area should be physically separate from the central housing area to minimize the potential for contamination.
- Dedicated Receiving Dock - A dock specific to animal functions is generally required. An elevator dedicated to animal usage should be located near the dock.

- Necropsy - This area is used for post mortem procedures on euthanatized or otherwise deceased animals. This function should either be located physically separate from "clean" areas or separated by a pressurized pass-through air lock.
- Containment Facilities - These areas are designed for working with potentially infectious biological agents. They operate under negative pressure to prevent the escape of air to the general environment. Wastes and effluents are separately contained and decontaminated.
- Veterinary Care – This area may include laboratory, surgery, and clinical care functions.
- Office Space – Office area is required inside the vivarium for veterinary and animal care staff.
- Staff Support Areas—Break area, cafeterias, workstation, lockers, and rest-room facilities. All are intended to support veterinary and research staff during their work shift.
- Mechanical/Electrical Equipment Spaces – This area includes mechanical equipment rooms, and electrical and telecommunications closets. It is desirable to locate the spaces and devices in a manner that allows the separation of maintenance functions from animal care functions.
- Corridors - These will be wide enough to accommodate animal rack, cart, and material traffic flow, not just egress requirements. Corridors should have a clear width of 7 to 8 feet. Corridors will have impervious finishes so that they are easy to clean and maintain. Protective components, such as bumper and corner guards, bull nose blocks and cove bases, are frequently employed to protect walls and doors from heavy, abusive traffic.
- The general organization of a vivarium is illustrated in Figure 6-1: Animal Facility Diagramatic Model Showing Basic Flows and Spatial Relationships.

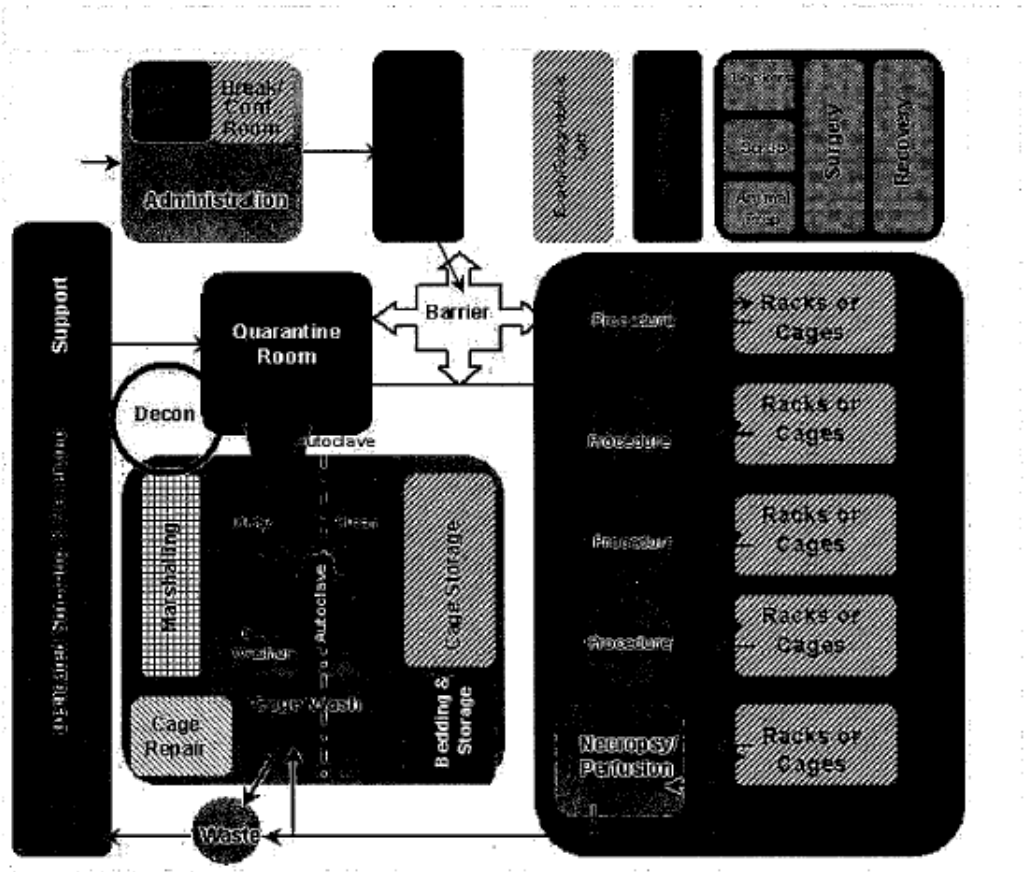


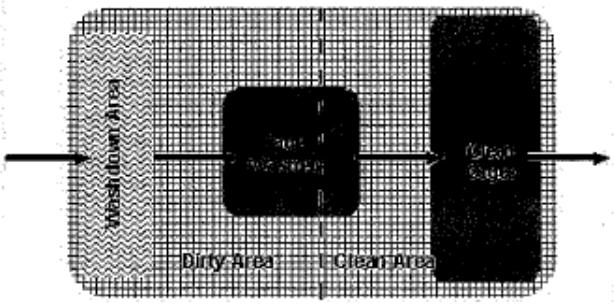
Animal Facility
Diagramatic Model Showing
Basic Flows and Spatial Relationships

Figure 6-1: Animal Facility Diagramatic Model Showing Basic Flows and Spatial Relationships



Lower Level
Health Sciences Center


Break/ Conf. Room
Administration
Support
Quarantine Room
Barrier
Decon
Autoclave
Marshalling
Cage Storage
Cage Wash
Cage Repair
Bedding & Storage
Waste
Racks or Cages
Racks or Cages
Racks or Cages
Racks or Cages
Racks or Cages
Necropsy/ Perfusion
Supply
Recovery


Dirty Area
Clean Area

UWL-PH2
2017-09-18
GREENHOUSE ADJACENCY VERIFICATION SKETCH

PLEASE VERIFY ADJACENCY AND ROOM TO ROOM CONNECTIONS REQUIRED AND IF WALLS ARE REQUIRED BETWEEN THE 3 PORTIONS OF THE GREEN HOUSE