UNIVERSITY of CALIFORNIA Riverside

DIVISION OF BIOMEDICAL SCIENCES

CLINICAL SKILLS AND SIMULATION
DETAILED PROJECT PROGRAM

In Support of Telemedicine and PRIME Facilities Phase II

MAY 23, 2008

prepared by CO ARCHITECTS

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1.0 EXECUTIVE SUMMARY

1.1 OVERVIEW

The following study defines the project scope of the proposed facilities renovation for the Division of Biomedical Sciences (Biomed) at the University of California, Riverside (UCR). The facilities are located on the basement level of the Statistics Computer Building (Stat Comp) on the UCR campus. The proposed renovation is comprised of 5,111 assignable square feet (ASF) consisting of Mock Exam Rooms, Monitoring Room, Conference Room, Simulation Lab, Clinical Corridor, Control Room, and Lecture Hall. The purpose of the study is to establish the goals, parameters and constraints of the project in sufficient detail to provide conceptual guidance for the subsequent design phases of the project and to estimate the cost of construction.

In conjunction with long term UCR Academic Planning goals, the Biomed program is expected to increase class size from twenty-four to twenty-eight students by 2012, and then to fifty students after 2012. This growth, coupled with the limited space for clinical skills training and a lack of medical simulation space, presents the main impetus for renovation of these facilities. The goals of this project include the following:

- Allow for the increase in students and create an efficient layout of space to accomodate new programmatic requirements for clinical skills and simulation training.
- Bring all renovated spaces into compliance with applicable codes and regulations.
- Facilitate potential upgrades in audiovisual infrastructure and equipment.

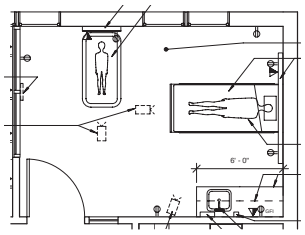
2.1 SPACE PROGRAM SUMMARY

Assignable Square Feet: **5,111**

Room Use Code	Room Code	Program Name / Space Type	Occupancy	ASF/Ea.	Quantity	TOTALS
Instructional						
		Simulation Room	6	240	1	**240**
		Control Room	3	101	1	**101**
		Mock Exam	3	100	4	**400**
		Conference Room	12	353	1	**353**
		Monitoring Room	9	212	1	**212**
		Lecture Hall	100	1,628	1	**1,628**
		Lecture Hall Storage	0	138	1	**138**
		Class Lab	50	1,590	1	**1,590**
		Clinical Corridor	0	449	1	**449**
					Subtotal:	***5,111***
RENOVATION TOTAL ASF						**5,111**

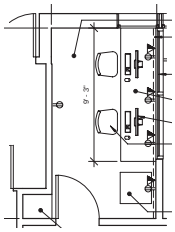
2.2 SPACE DESCRIPTIONS

A general overview of the spaces to be renovated are described below. The overview provides a brief description of the primary function of spaces, requirements for functional adjacencies and the basic planning criteria for each category.



Simulation Lab

- The Simulation Lab provides space for simulated medical training experiences and procedures. The lab includes both an adult and pediatric simulator station. Both simulators are medium-fidelity mannequins which are controlled by faculty operators in the adjacent Control Room. The actions and responses of students are observed directly from the Control Room through one-way mirror glass and simultaneously recorded by pan-tilt-zoom capable video cameras positioned to provide good views of both simulator stations. No more than seven people are expected to be in the Lab at any one time. It is likely that students would perform simulation exercises at either the adult station or the pediatric station, but not both simultaneously. Casework in the room provides a modest amount of equipment storage, as well as a sink location. Floors and surfaces should be easy-to-clean because of the common use of liquids and fake blood in simulation exercises.



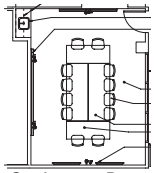
Control Room

- The Control Room is immediately adjacent to the Simulation Lab and provides direct one-way views into the room. The room has control consoles or computer terminals through which the simulator mannequins can be operated and monitored. Up to two faculty observers and a mannequin operator will be present. Acoustic separation from Simulation Lab and all nearby spaces is required.

Mock Exam Room

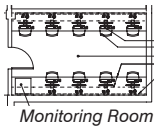
- The Mock Exam Rooms are used for practicing physical exams with a standardized patient and should accommodate up to two students with an instructor. The interactions between student and standardized patient are observed and recorded by pan-tilt-zoom capable video cameras. Each Mock Exam Room is outfitted with an exam table, cabinets for storage, sink, chairs, and a stool. Acoustic privacy is critical, requiring acoustically insulated, floor-to-floor partitions.

2.0
PROGRAM REQUIREMENTS



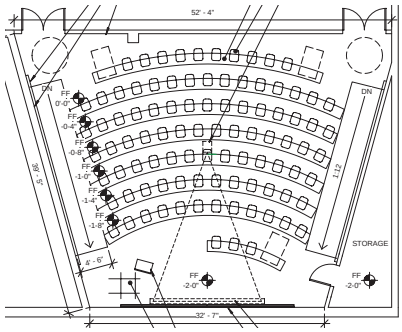
Conference Room

- The Conference Room is required student instruction and briefing/debriefing in conjunction with clinical skills and simulation activities. It may also be used occasionally for faculty and staff meetings. Two flat-panel monitors and an AV rack are required.



Monitoring Room

- The Monitoring room is a centralized observation room and control room for digital video recording of standardized patient exams in the Mock Exam Rooms. Nine monitoring stations are provided along two continuous desktops. Alternatively, movable desk workstations could be provided. The number of monitoring stations will be equal to the number of mock exam rooms. Each monitoring station will allow faculty members to remotely observe student/ standardized patient encounters. Carpet flooring is suggested for comfort and noise control. Incidental storage is provided by overhead wall cabinets. When not in use, the Monitoring Room can function as a hoteling office for visiting faculty.



Lecture Hall

- The Lecture Hall will undergo a full renovation to achieve the following:
  - Meet current accessibility standards.
  - Incorporate new AV technologies.
  - Replace fixed table / pedestal seating assemblies with fixed tables and movable chairs. Provide power at tables.
  - Upgrade lighting fixtures and controls.
  - Improve room acoustics.

2.3 SPECIAL DESIGN REQUIREMENTS

2.3.1 ACCESSIBILITY

Providing accessibility for persons with disabilities requires special design considerations. The facility must conform to applicable local, state and federal regulations. Early design consideration should be given to the following accessibility aspects:

- All parts of the building should be accessible by persons with disabilities.
- An 18" clearance on the pull side and 12" clearance on the push side of doors opposite the hinged side is required.

Some general criteria and guidelines for accessible work stations are as follows:

- Work surfaces should be located 30" to 34" above the floor with wheelchair clearance below. Adjustable work surfaces can provide a range of possible height adjustments.

- Service controls, equipment, and equipment controls should be located within easy reach for persons with limited mobility. Controls require single-action levers or blade handles for easy operation.

- Aisle widths and clearances should be adequate for maneuvers of wheelchair bound individuals. Aisles 5'-0" wide are recommended with turnaround areas.

- This project does not reduce existing corridor widths. New corridors should not be less than 44" wide.

2.3.2 NOISE CONTROL

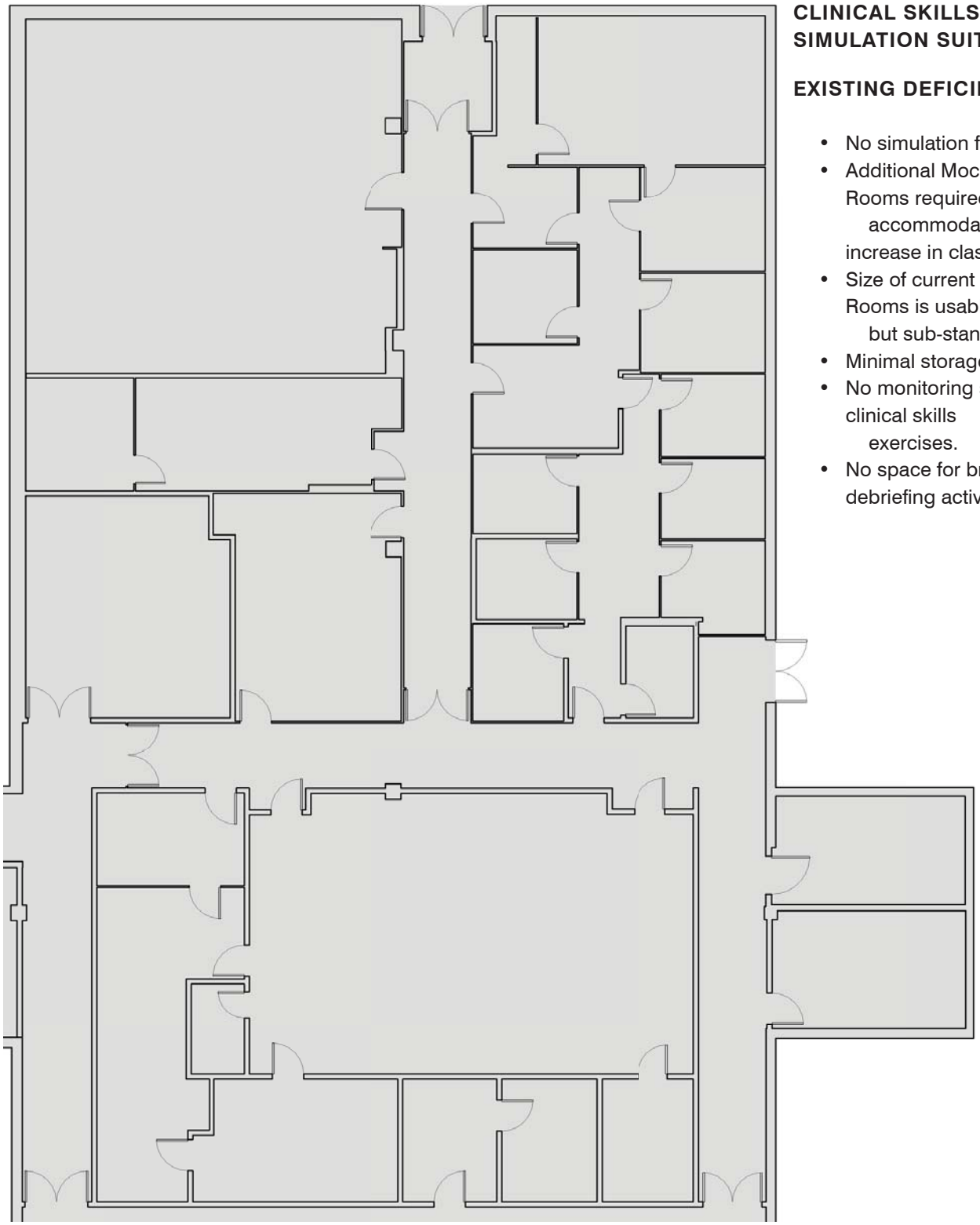
Due to the extensive use of video and audio recording devices in the Mock Exam Rooms and Simulation Lab, this project requires specific attention to design and construction details to provide proper acoustic separation and minimal interference from mechanical noise. The following features should be addressed in the design of the mechanical and electrical systems:

- Fan noise transmitted to spaces through the duct system or through the building structure. This noise is characterized by a low-frequency rumble and often includes annoying pure tones.
- Noise generated by the excitation of duct wall resonance produced by fan noise, by pressure fluctuations caused by fan instability, and by high turbulence caused by discontinuance in the duct system.

2.0 PROGRAM REQUIREMENTS

- Noise generated by air flowing past dampers, turning vanes, terminal device louvers, and comprising mid-to-high frequency energy.
- Water circulation system noise caused by high velocities or abrupt pressure changes that is generally transmitted through structural connections.
- Noise and vibration caused by out-of-balance forces generated by the operation of fans, pumps, compressors, etc.
- Magnetostrictive hum associated with the operation of fluorescent lighting ballasts, transformers, or electric motors.

3.1 DESIGN SCHEMES

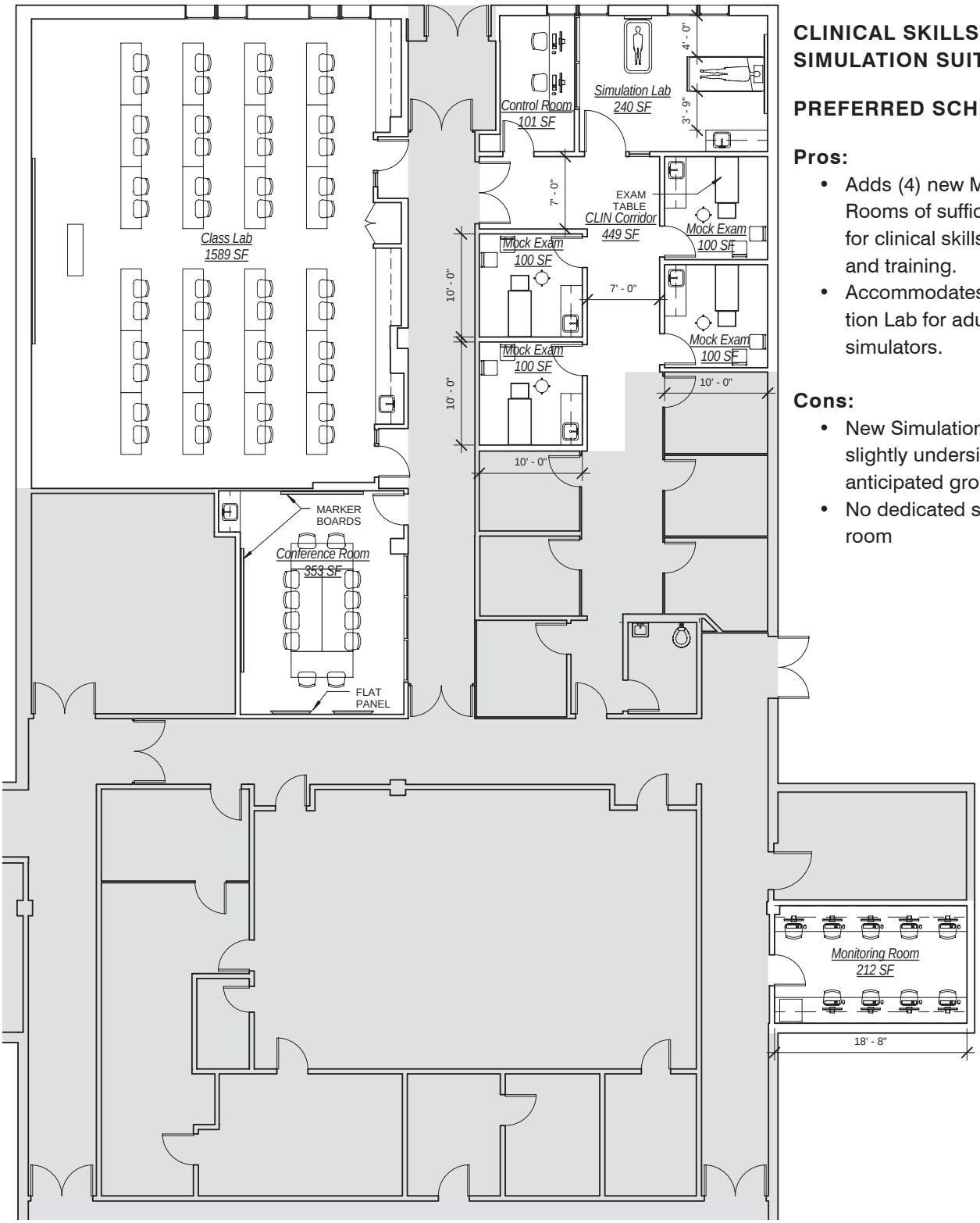


CLINICAL SKILLS AND SIMULATION SUITE

EXISTING DEFICIENCIES

- No simulation facilities.
- Additional Mock Exam Rooms required to accommodate future increase in class size.
- Size of current Mock Exam Rooms is usable but sub-standard.
- Minimal storage area.
- No monitoring space for clinical skills exercises.
- No space for briefing / debriefing activities.

3.1 DESIGN SCHEMES



CLINICAL SKILLS AND SIMULATION SUITE

PREFERRED SCHEME

Pros:

- Adds (4) new Mock Exam Rooms of sufficient size for clinical skills instruction and training.
- Accommodates Simulation Lab for adult and child simulators.

Cons:

- New Simulation Lab slightly undersized for anticipated group size.
- No dedicated storage room

3.1 DESIGN SCHEMES

CLINICAL SKILLS AND SIMULATION SUITE

ALTERNATE SCHEME

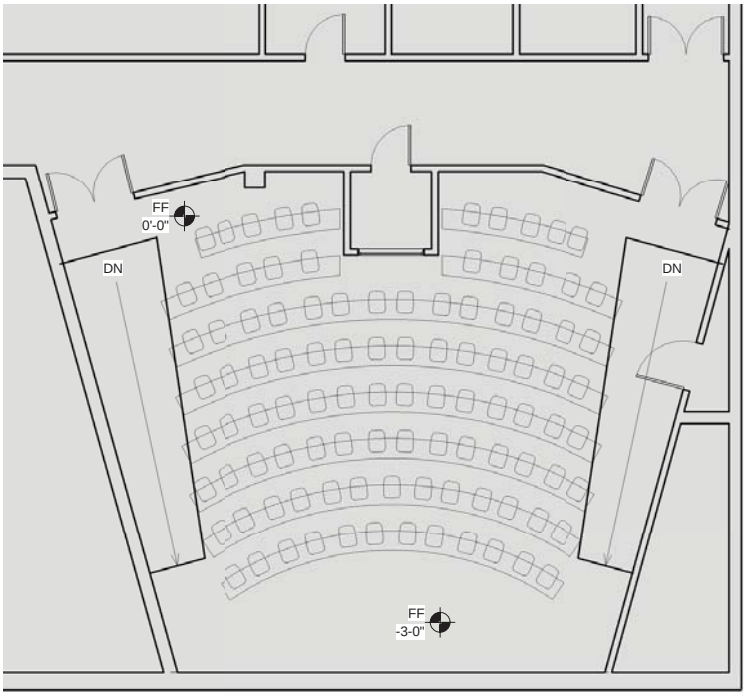
Pros:

- Adds (2) new Mock Exam Rooms of sufficient size for clinical skills instruction and training.
- Creates appropriately sized Simulation Lab for adult and child simulators.

Cons:

- Division of Biomedical Sciences would prefer additional Mock Exam Rooms for long-term class growth.
- No dedicated storage room

3.1 DESIGN SCHEMES

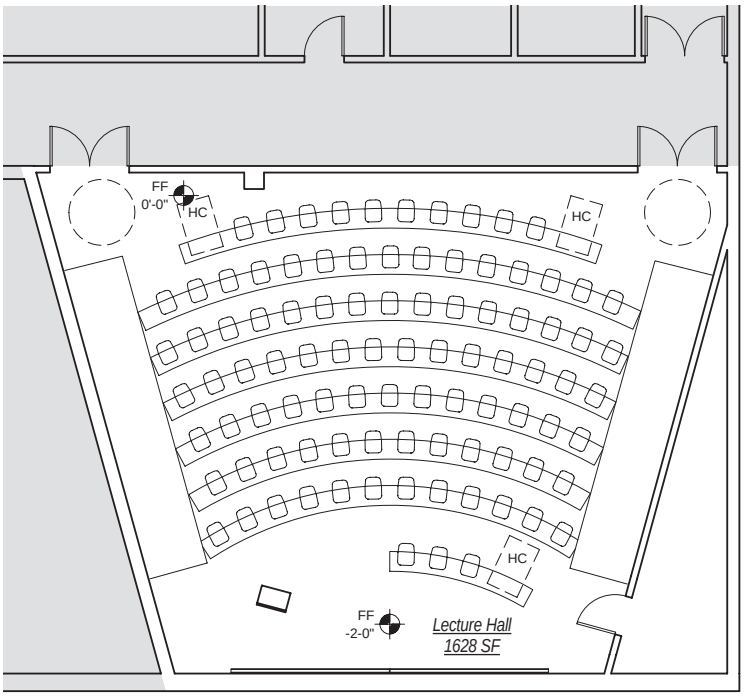


LECTURE HALL
EXISTING DEFICIENCIES

- Fixed pedestal seating not conducive for group exercises.
- No power at fixed tables.
- Minimum audio-visual technologies.
- Slope of ramp is not ADA compliant. No handicap accessible stations at front of room.
- Projector Room no longer required.
- Lighting and room finishes need upgrading.

3.0
DESIGN ORGANIZATION

3.1 DESIGN SCHEMES



LECTURE HALL IMPROVEMENTS

Pros:

- Provides ADA compliant access
- Provides power at fixed tables
- Upgrades audiovisual technology
- Upgrades interior finishes, lighting, and acoustics

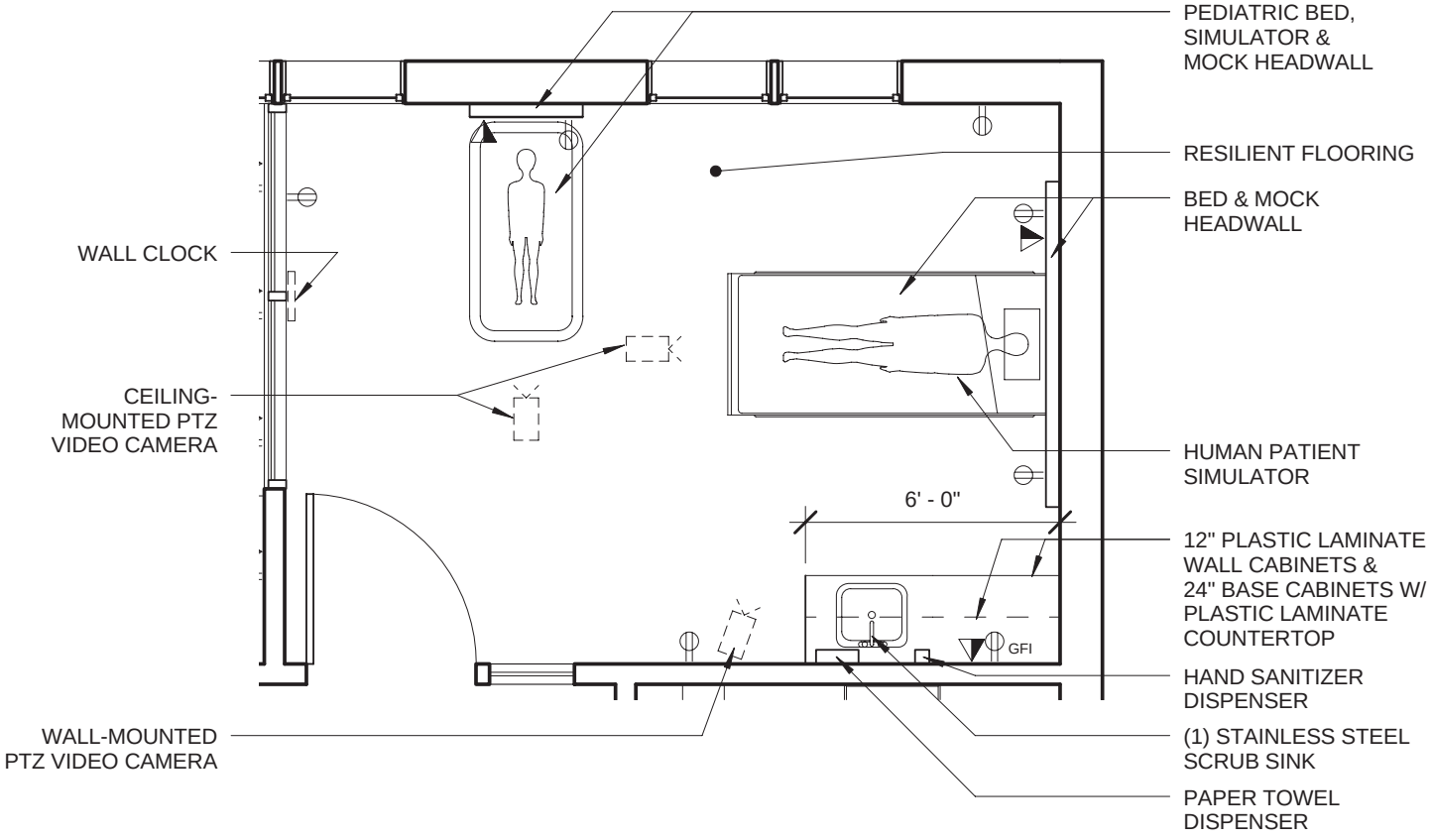
Cons:

- Requires significant reforming of concrete steps

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: **Instructional**
SPACE NAME: **Simulation**
SPACE ID: **TBD**
AREA: **240 ASF**



1/4" = 1'-0"

0' 1' 5'

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: Instructional
SPACE NAME: Simulation
SPACE ID: TBD
AREA: 240 ASF

SPACE DESCRIPTION

GENERAL DESCRIPTION:
For simulated training experiences in ICU, LDR, operating, and emergency room procedures. Includes both an adult and pediatric simulator station, and associated storage.

QUANTITY: (1)

ASF: 243 ASF

OCCUPANCY: (6)

UTILIZATION: 12 hours per day.

ADJACENCIES: Control room

ROOM DIMENSIONS: 9'-0" minimum ceiling height.

NATURAL LIGHT: Existing windows. Provide shades for sun control.

ROOM FINISHES:
- **Floor:** Resilient tile.
- **Base:** 4" rubber base.
- **Ceiling:** Acoustic Tile.
- **Partitions:** Gypsum Board, Paint. One-way mirror glass window.

DOORS: (1) 4'-0" x 7'-0" with 2'-0" sidelight panel.

ACOUSTICS: Acoustic isolation. Provide floor to floor partitions.

SIGHTLINES: Design space to allow clear views for video cameras.

SIGNAGE: Room name and number.

BUILDING SYSTEM REQUIREMENTS

TEMPERATURE: 75°F ±2°F Summer, 72°F ±3°F Winter

HUMIDITY: 55% ±5%

VENTILATION: 50 FPM, Recirculated Air.

AIR CHANGES: 6 AC/Hr.

LIGHTING LEVELS: Fluorescent, 75fc at work surface, dimmable to 5fc.

POWER: 110V, 60A, 1 phase.

DATA: (3) ethernet data ports; (2) located near bed simulators, (1) located at casework.

TELECOMMUNICATIONS: (1) phone outlet.

AUDIOVISUAL:
1. Two (2) ceiling-mounted PTZ (Pan/Tilt/Zoom) video cameras
2. One (1) wall-mounted PTZ video camera.

VIDEO: None

PIPED SERVICES: Sink with hot and cold water.

SECURITY: Lockable door.

ROOM CONTENTS

GROUP I:

Built-in Equipment:
- (1) Mock headwall (adult)
- (1) Mock headwall (pediatric)
- (1) Built-in base cabinets and wall cabinets for storage
- (1) Stainless steel sink
- (1) Hand sanitizer dispenser
- (1) Paper towel dispenser
- (1) Wall clock

GROUP II & III:

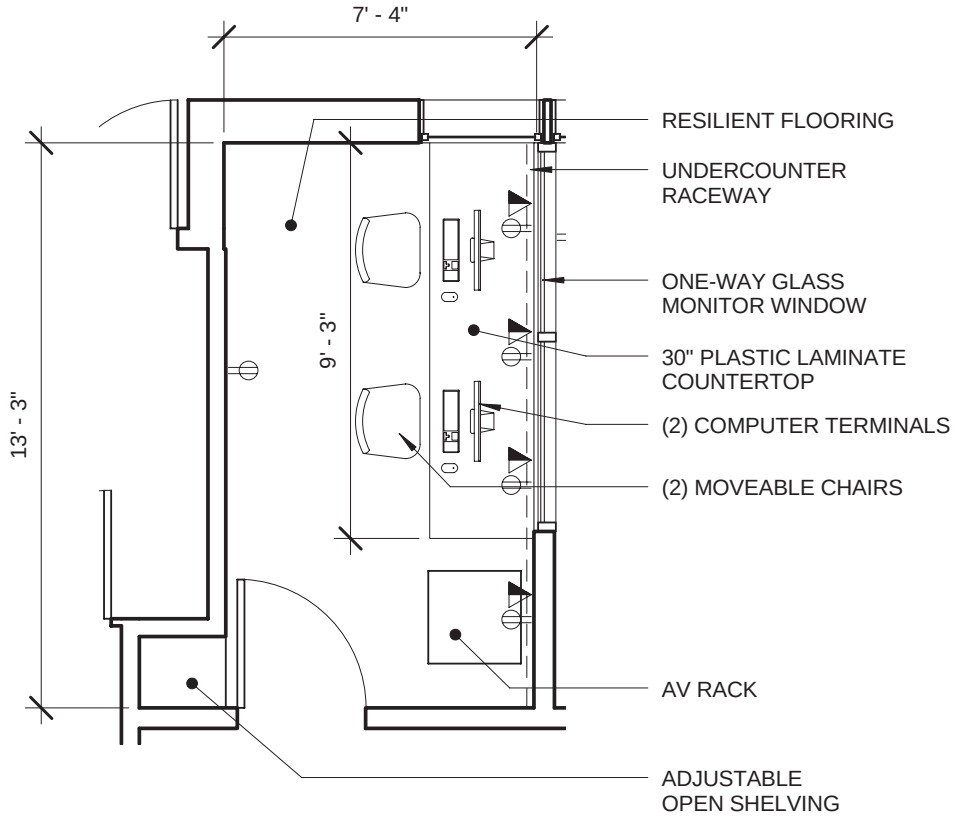
Movable Equipment:
- (1) Human patient simulator
- (1) Pediatric patient simulator

Furnishings:
- (1) Adult bed
- (1) Pediatric bed

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: **Instructional**
SPACE NAME: **Control Room**
SPACE ID: **TBD**
AREA: **101 ASF**



1/4" = 1'-0"

0' 1' 5'

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: Instructional
SPACE NAME: Control Room
SPACE ID: TBD
AREA: 101 ASF

SPACE DESCRIPTION

GENERAL DESCRIPTION:
Control room with console for operation of the mannequin systems by script operator plus instructor(s) or observer(s), one doing patient voice. Monitors digital recordings of simulation data.

QUANTITY: (1)

ASF: 101 ASF

OCCUPANCY: (3)

UTILIZATION: 12 hours per day.

ADJACENCIES: Simulation

ROOM DIMENSIONS: 9'-0" minimum ceiling height.

NATURAL LIGHT: Existing windows. Provide shades for sun control and blackout.

ROOM FINISHES:
- **Floor:** Resilient tile.
- **Base:** 4" rubber base.
- **Ceiling:** Acoustic Tile.
- **Partitions:** Gypsum Board, Paint. One-way mirror glass window

DOORS: 3'-0" x 7'-0"

ACOUSTICS: Acoustic isolation. Provide floor to floor partitions.

SIGHTLINES: Design space to allow clear view through window into Simulation.

SIGNAGE: Room name and number.

BUILDING SYSTEM REQUIREMENTS

TEMPERATURE: 75°F ±2°F Summer, 72°F ±3°F Winter

HUMIDITY: 55% ±5%

VENTILATION: 50 FPM, Recirculated Air.

AIR CHANGES: 6 AC/Hr.

LIGHTING LEVELS: Fluorescent, 75fc at work surface, dimmable to 5fc.

POWER: 110V, 60A, 1 phase.

DATA: (4) ethernet data ports convenient to desk/counter.

TELECOMMUNICATIONS: (1) phone outlet.

AUDIOVISUAL: Rack near console. Audio system to communicate with team or as patient voice.

VIDEO: None

PIPED SERVICES: None

SECURITY: Lockable door.

ROOM CONTENTS

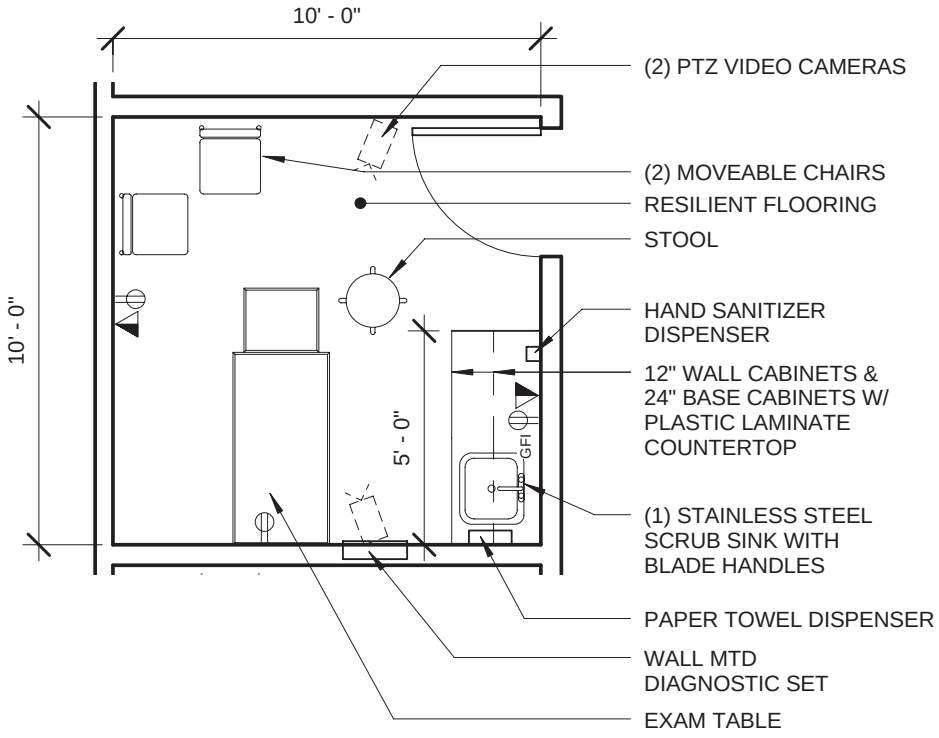
GROUP I:
- **Built-in Equipment:** (1) Desk/counter facing observation window

GROUP II & III:
- **Movable Equipment:** (2) Controller stations with multi-monitor displays
- **Furnishings:** (2) Chairs

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: **Instructional**
SPACE NAME: **Mock Exam**
SPACE ID: **TBD**
AREA: **100 ASF**



1/4" = 1'-0"

0' 1' 5'

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: Instructional
SPACE NAME: Mock Exam
SPACE ID: TBD
AREA: 100 ASF

SPACE DESCRIPTION

GENERAL DESCRIPTION:
Exam rooms for practicing physical exams with a standardized patient. Should accommodate up to two students with an instructor.

QUANTITY: (4)

ASF: 100 ASF

OCCUPANCY: (3)

UTILIZATION: 12 hours per day.

ADJACENCIES: None

ROOM DIMENSIONS: 9'-0" minimum ceiling height.

NATURAL LIGHT: None

ROOM FINISHES:
- **Floor:** Resilient tile.
- **Base:** 4" rubber base.
- **Ceiling:** Acoustic Tile.
- **Partitions:** Gypsum Board, Paint.

DOORS: 3'-0" x 7'-0"

ACOUSTICS: Acoustic isolation. Provide floor to floor partitions.

SIGHTLINES: Design space to allow clear view for video camera

SIGNAGE: Room name and number.

BUILDING SYSTEM REQUIREMENTS

TEMPERATURE: 75°F ±2°F Summer, 72°F ±3°F Winter

HUMIDITY: 55% ±5%

VENTILATION: 50 FPM, Recirculated Air.

AIR CHANGES: 6 AC/Hr.

LIGHTING LEVELS: Fluorescent, 75fc at work surface, dimmable to 5fc.

POWER: 110V, 60A, 1 phase.

DATA: (2) ethernet data ports (1) at casework, (1) at opposite wall.

TELECOMMUNICATIONS: (1) phone outlet.

AUDIOVISUAL: Digital video recording system with PTZ video camera (centrally controlled) and microphone system, with SP override.

VIDEO: None

PIPED SERVICES: Sink with hot and cold water.

SECURITY: Lockable door.

ROOM CONTENTS

GROUP I:

Built-in Equipment:
- (1) Built-in base cabinets and wall cabinets for storage
- (1) Coat hook
- (1) Stainless steel sink
- (1) Hand sanitizer dispenser
- (1) Paper towel dispenser

GROUP II & III:

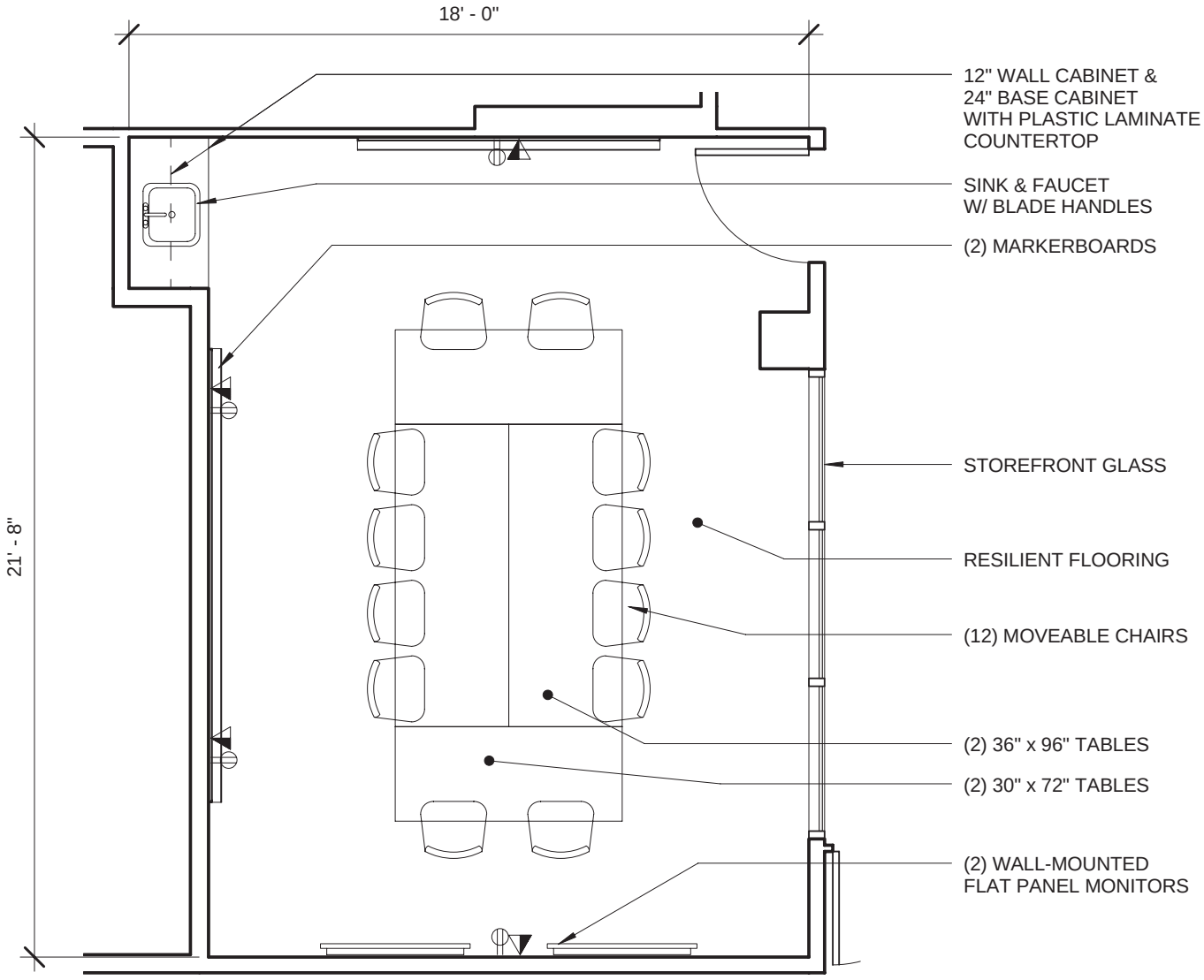
Movable Equipment:
- (1) Exam table

Furnishings:
- (2) Chairs
- (1) Stool

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: **Instructional**
SPACE NAME: **Conference**
SPACE ID: **B621**
AREA: **353 ASF**



1/4" = 1'-0"

0' 1' 5'

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: Instructional
SPACE NAME: Conference Room
SPACE ID: B621
AREA: 353 ASF

SPACE DESCRIPTION

GENERAL DESCRIPTION:
For staff meetings, student instruction, SP training, and briefing/debriefing in conjunction with mock exams and simulation suite.

QUANTITY: (1)

ASF: 353 ASF

OCCUPANCY: (12)

UTILIZATION: 24 hours per day.

ADJACENCIES: None

ROOM DIMENSIONS: 9'-0" minimum ceiling height.

NATURAL LIGHT: Borrowed light from corridor

ROOM FINISHES:
- **Floor:** Resilient tile.
- **Base:** 4" rubber base.
- **Ceiling:** Acoustic Tile.
- **Partitions:** Gypsum Board, Paint. Glass wall at corridor

DOORS: 3'-0" x 7'-0"

ACOUSTICS: Acoustic isolation. Provide floor to floor partitions.

SIGHTLINES: None

SIGNAGE: Room name and number.

BUILDING SYSTEM REQUIREMENTS

TEMPERATURE: 75°F ±2°F Summer, 72°F ±3°F Winter

HUMIDITY: 55% ±5%

VENTILATION: 50 FPM, Recirculated Air.

AIR CHANGES: 6 AC/Hr.

LIGHTING LEVELS: Fluorescent, 75fc at work surface, dimmable to 5fc.

POWER: 110V, 60A, 1 phase.

DATA: (4) ethernet data ports; (3) at markerboards, (1) at flat-panel monitors

TELECOMMUNICATIONS: (1) phone outlet.

AUDIOVISUAL: (2) Wall-mounted flat panel monitors

VIDEO: None

PIPED SERVICES: Sink with hot and cold water.

SECURITY: Lockable door.

ROOM CONTENTS

GROUP I:

Built-in Equipment:
- (1) Built-in base cabinets and wall cabinets for storage
- (1) Stainless steel sink
- (1) Hand sanitizer dispenser
- (1) Paper towel dispenser
- (2) Markerboards

GROUP II & III:

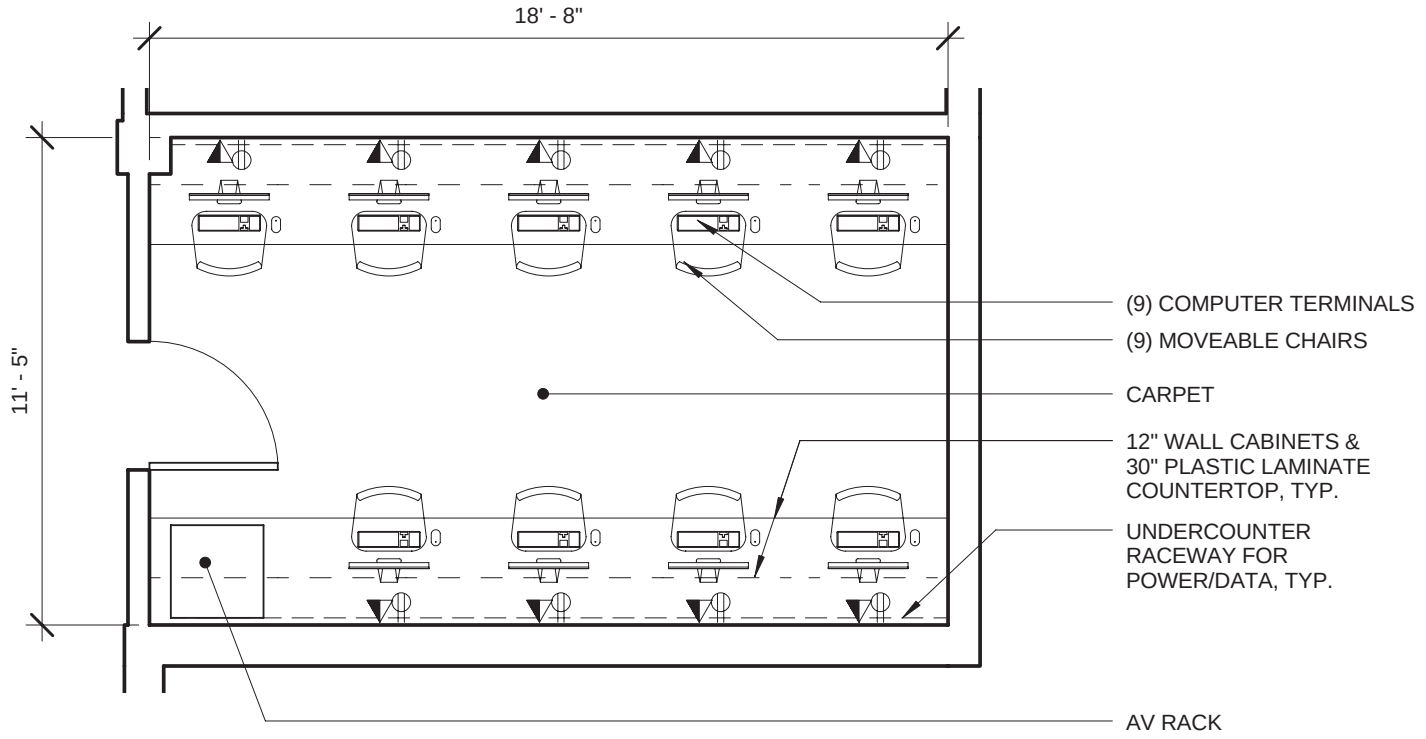
Movable Equipment:
- (2) Flat-panel monitors

Furnishings:
- (2) 36” x 96” tables
- (2) 30” x 72” tables
- (12) Chairs

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: **Instructional**
SPACE NAME: **Monitoring Room**
SPACE ID: **B635**
AREA: **212 ASF**



1/4" = 1'-0"

0' 1' 5'

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: Instructional
SPACE NAME: Monitoring Room
SPACE ID: B635
AREA: 212 ASF

SPACE DESCRIPTION

GENERAL DESCRIPTION:
Central control room for digital video recording of SP exams in mock exam rooms, including equipment and tech support workstation. System needs to record vital signs monitoring in sync with video recording of patient encounter.

QUANTITY: (1)

ASF: 212 ASF

OCCUPANCY: (9)

UTILIZATION: 12 hours per day.

ADJACENCIES: None (can be remote from mock exam rooms)

ROOM DIMENSIONS: 9'-0" minimum ceiling height.

NATURAL LIGHT: None

ROOM FINISHES:
- **Floor:** Carpet.
- **Base:** 4" rubber base.
- **Ceiling:** Acoustic Tile.
- **Partitions:** Gypsum Board, Paint.

DOORS: 3'-0" x 7'-0"

ACOUSTICS: Acoustic isolation. Provide floor to floor partitions.

SIGHTLINES: None

SIGNAGE: Room name and number.

BUILDING SYSTEM REQUIREMENTS

TEMPERATURE: 75°F ±2°F Summer, 72°F ±3°F Winter

HUMIDITY: 55% ±5%

VENTILATION: 50 FPM, Recirculated Air.

AIR CHANGES: 6 AC/Hr.

LIGHTING LEVELS: Fluorescent, 75fc at work surface, dimmable to 5fc.

POWER: 110V, 60A, 1 phase.

DATA: (9) ethernet data ports; (1) at each monitoring station

TELECOMMUNICATIONS: (1) phone outlet.

AUDIOVISUAL: Console terminals with flat panel displays

VIDEO: None

PIPED SERVICES: None

SECURITY: Lockable door.

ROOM CONTENTS

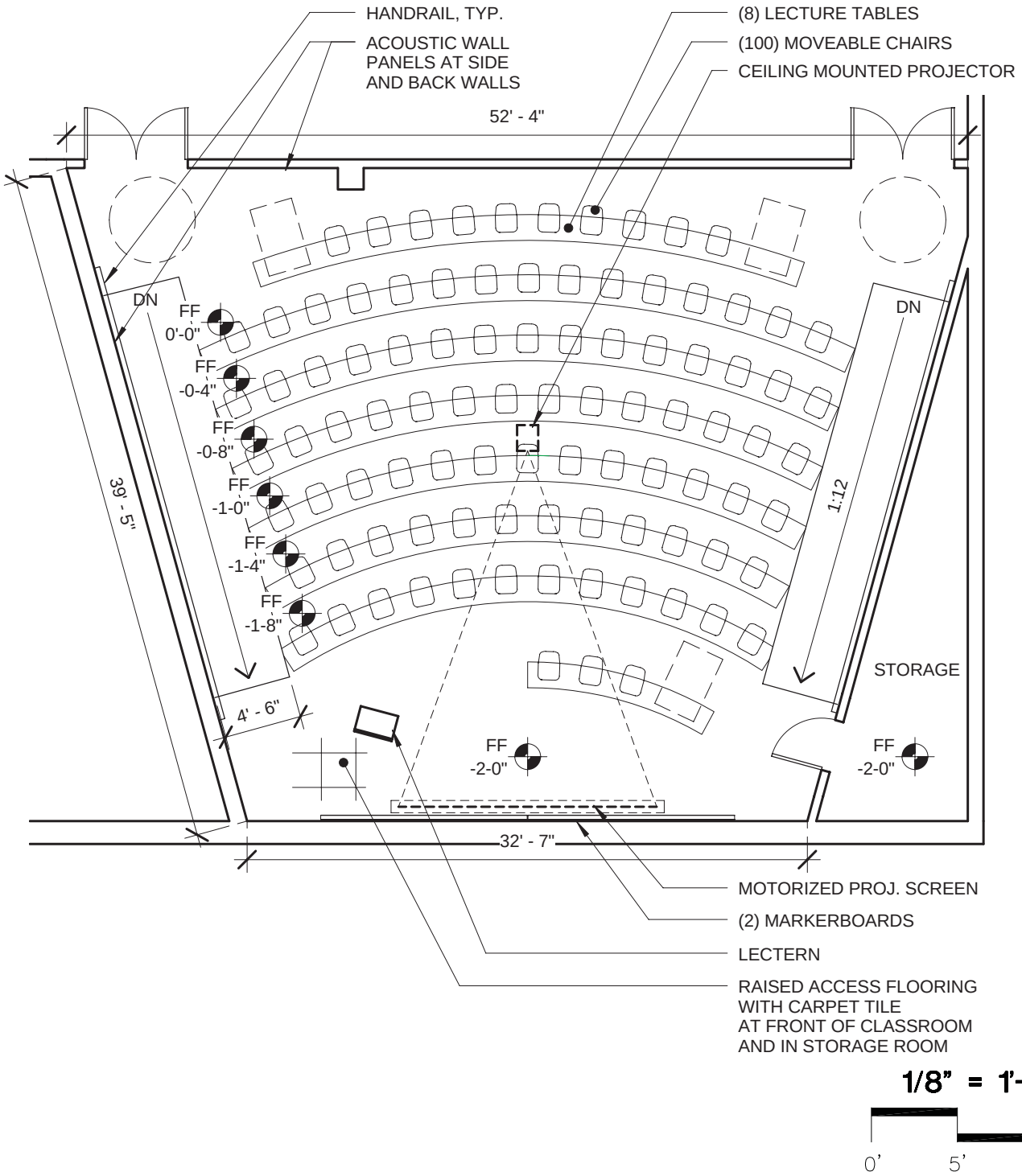
GROUP I:
- **Built-in Equipment:** (2) Wall cabinets and countertop with knee space underneath
  (2) Undercounter raceway for power/data.

GROUP II & III:
- **Movable Equipment:** (9) Computer terminals
- **Furnishings:** (9) Chairs

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: **Instructional**
SPACE NAME: **Lecture Hall**
SPACE ID: **B650**
AREA: **1628 ASF**



1/8" = 1'-0"

0' 5' 10'

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: Instructional
SPACE NAME: Lecture Hall
SPACE ID: B650
AREA: 1628 ASF

SPACE DESCRIPTION

GENERAL DESCRIPTION:
Lecture Hall

QUANTITY: (1)

ASF: 1628 ASF

OCCUPANCY: (100)

UTILIZATION: 24 hours per day.

ADJACENCIES: Ancillary storage

ROOM DIMENSIONS: 9'-0" minimum ceiling height.

NATURAL LIGHT: None

ROOM FINISHES:
- **Floor:** Carpet tile and broadloom carpet.
- **Base:** Wood base.
- **Ceiling:** Acoustic Tile and Gypsum Board, Paint.
- **Partitions:** Gypsum Board, Paint.

DOORS: 6'-0" x 7'-0"

ACOUSTICS: Acoustic isolation. Provide floor to floor partitions.

SIGHTLINES: Design space to allow clear views from all seating positions.

SIGNAGE: Room name and number.

BUILDING SYSTEM REQUIREMENTS

TEMPERATURE: 75°F ±2°F Summer, 72°F ±3°F Winter

HUMIDITY: 55% ±5%

VENTILATION: 50 FPM, Recirculated Air.

AIR CHANGES: 6 AC/Hr.

LIGHTING LEVELS: Fluorescent, 75fc at work surface, dimmable to 5fc.

POWER: 110V, 60A, 1 phase.

DATA: (4) ethernet data ports convenient to desk/counter.

TELECOMMUNICATIONS: (1) phone outlet.

AUDIOVISUAL: One large central screen, projection by a ceiling mounted projector. Power receptacles available to each seating position.

VIDEO: None

PIPED SERVICES: None

SECURITY: Lockable door.

ROOM CONTENTS

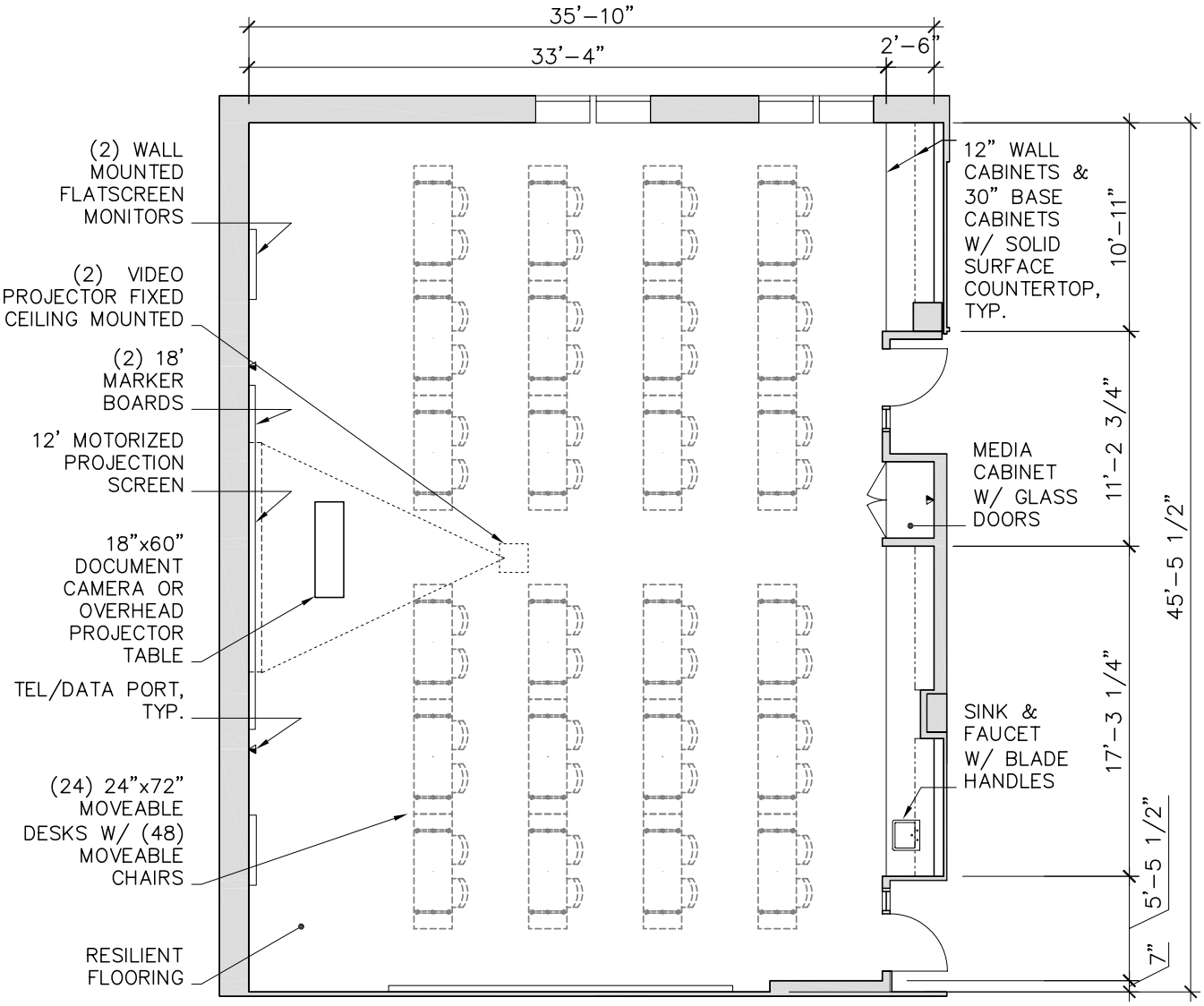
GROUP I:
Built-in Equipment:
(2) Markerboards
(10) Lecture Hall tables
(1) Motorized Projection Screen
(1) Ceiling Mounted Projector

GROUP II & III:
Furnishings:
(100) Chairs
(1) Lectern

4.0
DETAILED SPACE REQUIREMENTS AND DIAGRAMS

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: **Instructional**
SPACE NAME: **Class Lab**
SPACE ID: **B0601**
AREA: **1,590 ASF**



1/8" = 1'-0"

0' 5' 10'

NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

SPACE TYPE: Instructional
SPACE NAME: Class Lab
SPACE ID: B0601
AREA: 1,590 ASF

SPACE DESCRIPTION

GENERAL DESCRIPTION:
Classroom/ Lecture room for didactic lecture, group learning instruction, presentations, and seminars.

QUANTITY: (1)

ASF: 1,590 ASF

OCCUPANCY: (50)

UTILIZATION: 24 hours per day.

ADJACENCIES: NA

ROOM DIMENSIONS: 9'-0" minimum ceiling height.

NATURAL LIGHT: Existing windows. Provide shades for sun control.

ROOM FINISHES:
- **Floor:** Resilient tile.
- **Base:** 4" rubber base.
- **Ceiling:** Acoustic Tile.
- **Partitions:** Gypsum Board, Paint.

DOORS: (2) 3'-0" x 7'-0" with 1'-0" sidelight panel.

ACOUSTICS: Acoustic isolation for Classroom. Provide floor to floor partitions.

SIGHTLINES: Design space to allow clear views to markerboards and projection screen.

SIGNAGE: Room name and number.

BUILDING SYSTEM REQUIREMENTS

TEMPERATURE: 75°F ±2°F Summer, 72°F ±3°F Winter

HUMIDITY: 55% ±5%

VENTILATION: 50 FPM, Recirculated Air.

AIR CHANGES: 6 AC/Hr.

LIGHTING LEVELS: Fluorescent, 75fc at work surface, dimmable to 5fc.

POWER: 110V, 60A, 1 phase.

DATA: (3) ethernet data ports located near projection screen, (1) located near media cabinet.

TELECOMMUNICATIONS: (2) phone outlet.

AUDIOVISUAL:
1. Data projection.
2. Overhead projection.
3. Slide projection.

VIDEO: Video/data projection.

PIPED SERVICES: Sink with hot and cold water.

SECURITY: Lockable doors.

ROOM CONTENTS

GROUP I:

Built-in Equipment:
- (1) Motorized Projection Screen
- (1) Built-in base cabinets and wall cabinets for storage; provide knee opening for computer workstation.
- (1) Built-in Media Cabinet for remote audiovisual equipment; glass doors for slide projection cabinet.

GROUP II & III:

Movable Equipment:
- (2) Markerboards
- (2) Wall mounted flatscreen monitors

Furnishings:
- (24) 24" x 72" movable desks.
- (48) Chairs w/t arms
- (1) 18" x 60" movable table

5.0
PROJECT SCHEDULE

5.1 PROJECT SCHEDULE

The University anticipates receiving funding for this project in July 2009. An eight-week construction period will begin in mid-June 2010 and will be completed in August.

CO ARCHITECTS

5055 Wilshire Boulevard, 9th Floor
Los Angeles, California 90036
www.coarchitects.com
323.525.0500 phone, 323.525.0955 fax

April 8, 2008

UC Riverside
Division of Biomedical Sciences

Clinical Skills / Simulation Suite
Program Assumptions

1. Class Size.
    a. Increase from 24 to 28. 2 students over the next 2 years (2008-2012).
    b. Increase to 50 (2012-beyond).

2. Program
    a. PBL Room:
        i. 12 Person.
    b. Simulation Suite:
        i. Simulation Lab
            1. (1) Adult mannequin.
            2. (1) Child mannequin.
            3. 4 groups of (7) students.
            4. No gasses.
            5. Generic, flexible. Not acuity specific.
        ii. Control Room
            1. Adjacent to Simulation Lab.
            2. One-way vision panel into Lab.
    c. Part Task training will be taught in Class Lab.
    d. Clinical Skills:
        i. Add (2) Exam Rooms.
            1. Consider 120 ASF per room.
        ii. Monitoring Room.
            1. Can be remote. Possibly use existing PBL Room.
            2. Can double as drop-in office when not in use.
        iii. Conference Room. For briefing/debriefing.
            1. Confirm AV requirements.
        iv. Class Lab will be used for Standardized Patient waiting.
    e. Lecture Hall
        i. Need to accommodate (100) students.
    f. Assume Dean's Suite moves to Level 1.

3. Lecture Hall.
    a. Need to accommodate (100) students.
    b. Fixed tables, movable chairs.
    c. Power at seats.

d. Improve lighting.
e. Acoustical upgrades.
f. Can eliminate existing Projection Room.
g. Need to resolve ADA access to front of room.

4. Schedule
   a. Funding July 2009.
   b. Construction 2010. Construction window mid-June to August.

A2.0
CONCEPTUAL DESIGN COST PLAN

SEE ATTACHED

CONCEPTUAL DESIGN
COST PLAN

for

Clinical Skills Renovation
University of California Riverside
Los Angeles, California

DAVIS LANGDON

May 7, 2008

CONCEPTUAL DESIGN COST PLAN

for

Clinical Skills Renovation
University of California Riverside
Los Angeles, California

CO Architects
5055 Wilshire Blvd.
Suite 900
Los Angeles, California 90036-

Tel: (323) 525-0500
Fax: (323) 525-0955

May 7, 2008

DAVIS LANGDON
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www.davislangdon.com

CONTENTS

BASIS OF COST PLAN

Cost Plan Prepared From	Dated	Received
Outline Specification		
Clinical Skills and Simulation DPP	5/2/2008	5/2/2008

Discussions with the Project Architect and Engineers

Conditions of Construction

The pricing is based on the following general conditions of construction

A start date of June 2010

A construction period of 4 months

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The contractor will be required to pay prevailing wages

There are no phasing requirements

The general contractor may not have full access to the site during normal business hours

INCLUSIONS

This project consists of the renovation of 4,665 asf and 6,422 gsf of existing space to become Biomedical Science program.

The cost plan includes the following functions for building systems:

Floor and roof structure includes general repair to floor slabs following the interior demolition of the existing space, new riser profile to the lecture theater, and the miscellaneous alterations to accept the new program.

Interior partitions, doors and framing includes new partitions, doors and glazing

Floor, wall and ceiling finish includes new finish for all new program spaces.

Function equipment and specialties include corner guards and crash rails, cabinets, counters and casework, medical headwalls, light control and vision equipment, misc. specialties.

Plumbing includes sanitary and institutional fixtures and associated connection pipe work.

Heating, ventilating & air conditioning includes heating hot water pipework, fittings and VAV boxes. Air distribution and return and building management controls.

Electrical includes machine, equipment and user convenience power, lighting, telephone/data, audio/visual - conduit only, security and fire alarm.

Fire protection includes a complete automatic wet sprinkler system - reconfigure (E).

Demolition includes demolishing the interior existing fitout.

INCLUSIONS

BIDDING PROCESS - MARKET CONDITIONS

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated. The mark-ups cover the costs of field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular item of work.

Pricing reflects probable construction costs obtainable in the project locality on the date of this statement of probable costs. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 3 bidders for all items of subcontracted work and 3-4 general contractor bids. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Davis Langdon has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon's best judgment as professional construction consultant familiar with the construction industry. However, Davis Langdon cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

EXCLUSIONS

Owner supplied and installed furniture, fixtures and equipment

Loose furniture and equipment except as specifically identified

Hazardous material handling, disposal / abatement

Compression of schedule, premium or shift work, and restrictions on the contractor's working hours

Design, testing, inspection or construction management fees

Architectural and design fees

Scope change and post contract contingencies

Assessments, taxes, finance, legal and development charges

Environmental impact mitigation

Builder's risk, project wrap-up and other owner provided insurance program

Land and easement acquisition

Cost escalation beyond a start date of June 2010

Medical gases - O, A and V

Domestic hot water heater - upgrades

Roof drainage reconfiguration.

Floor drains

Air handling unit and exhaust fan upgrades

Fire/smoke dampers

Chilled water systems

Test and balance HVAC systems to surrounding spaces

Telephone/data 'active' equipment - including hubs, routers, LAN, servers, switches and the like

MATV

Upgrades to (E) normal and emergency power distribution equipment and feeders

UPS - By Owner

Public address

Centralized clocks

Utility upgrades

OVERALL SUMMARY

	Gross Floor Area	$ / SF	$x1,000
Clinical Skills Renovation	6,422 SF	331.96	2,132
TOTAL Building Construction	6,422 SF	331.96	2,132
Breakout Pricing			
Mock Exam Room Renovation			80

Please refer to the Inclusions and Exclusions sections of this report

CLINICAL SKILLS RENOVATION AREAS & CONTROL QUANTITIES

Areas

	SF	SF	SF
Enclosed Areas			
Clinical Skills Renovation	6,422		
SUBTOTAL, Enclosed Area		6,422	
Covered area	N/A		
SUBTOTAL, Covered Area @ ½ Value			
TOTAL GROSS FLOOR AREA			6,422

Control Quantities

			Ratio to Gross Area
Number of stories (x1,000)	1	EA	0.156
Gross Area	6,422	SF	1.000
Enclosed Area	6,422	SF	1.000
Assignable Area	4,665	SF	0.726
Class Lab	1,590	SF	0.248
Simulation Room	243	SF	0.038
Control Room	101	SF	0.016
Mock Exam Rooms	400	SF	0.062
Conference Room	353	SF	0.055
Monitoring Room	212	SF	0.033
Lecture Hall	1,628	SF	0.254
Storage	138	SF	0.021
Building Circulation	1,273	SF	0.198
Building Gross Up (walls and shafts only)	484	SF	0.075
Volume	83,486	CF	13.000
Interior Partition Length	206	LF	0.032
Finished Area	6,422	SF	1.000
Plumbing Fixtures (x1,000)	7	EA	1.090

CLINICAL SKILLS RENOVATION COMPONENT SUMMARY

Gross Area: 6,422 SF

		$/SF	$x1,000
1. Foundations		0.00	0
2. Vertical Structure		0.00	0
3. Floor & Roof Structures		14.29	92
4. Exterior Cladding		0.00	0
5. Roofing, Waterproofing & Skylights		0.00	0
Shell (1-5)		14.29	92
6. Interior Partitions, Doors & Glazing		26.12	168
7. Floor, Wall & Ceiling Finishes		22.24	143
Interiors (6-7)		48.36	311
8. Function Equipment & Specialties		37.82	243
9. Stairs & Vertical Transportation		0.00	0
Equipment & Vertical Transportation (8-9)		37.82	243
10. Plumbing Systems		6.77	44
11. Heating, Ventilating & Air Conditioning		49.62	319
12. Electric Lighting, Power & Communications		49.62	319
13. Fire Protection Systems		5.50	35
Mechanical & Electrical (10-13)		111.51	716
Total Building Construction (1-13)		211.98	1,361
14. Site Preparation & Demolition		12.07	78
15. Site Paving, Structures & Landscaping		0.00	0
16. Utilities on Site		0.00	0
Total Site Construction (14-16)		12.07	78
TOTAL BUILDING & SITE (1-16)		224.05	1,439
General Conditions	15.00%	33.63	216
Contractor's Overhead & Profit or Fee	5.00%	12.92	83
PLANNED CONSTRUCTION COST	*May 2008*	270.61	1,738
Contingency for Development of Design	10.00%	27.09	174
Escalation to Start Date (June 2010)	11.50%	34.26	220
RECOMMENDED BUDGET	*June 2010*	331.96	2,132

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
1. Foundations				
No work required				*N/A*
				0
2. Vertical Structure				
No work required				*N/A*
				0
3. Floor and Roof Structure				
Slabs on grade				
Repair existing slabs on grade to accommodate revised program	6,422	SF	3.00	19,266
Recast stepped slab on grade	1,412	SF	25.00	35,300
Access ramps to lecture hall	216	SF	45.00	9,720
Miscellaneous				
Misc. iron	1	LS	27,500.00	27,500
				91,786
4. Exterior Cladding				
No work required				*N/A*
				0
5. Roofing, Waterproofing & Skylights				
No work required				*N/A*
				0

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
6. Interior Partitions, Doors & Glazing				
Partition cores and framing				
4" metal stud, blocking	3,678	SF	7.50	27,585
Partition surfacing				
3/8" gypsum wallboard taped and sanded	7,356	SF	4.75	34,941
3/8" gypsum wallboard underlayment	7,356	SF	3.75	27,585
Paint	7,356	SF	1.75	12,873
Sound insulation				
Batt insulation	3,678	SF	1.75	6,437
Sealing and caulking	3,678	SF	1.50	5,517
Glazing				
One-way glass monitor window	54	SF	95.00	5,130
Storefront glass to conference room	162	SF	75.00	12,150
Interior doors, frames and hardware				
Install new				
Single, 3'0"x7'0"	7	EA	2,000.00	14,000
Single, 3'0"x7'0", with 1'0" sidelight panel	2	EA	2,250.00	4,500
Single, 4'0"x7'0", with 2'0" sidelight panel	1	EA	3,000.00	3,000
Double, pair, 6'0"x7'0"	4	EA	3,500.00	14,000
				167,718
7. Floor, Wall & Ceiling Finishes				
Floors				
Class Lab - resilient tile	1,590	SF	6.75	10,733
Simulation room - resilient tile	243	SF	6.75	1,640
Control room - resilient tile	101	SF	6.75	682
Mock exam rooms - resilient tile	400	SF	6.75	2,700
Conference room - resilient tile	353	SF	6.75	2,383
Monitoring room - carpet	212	SF	7.50	1,590
Lecture Hall - resilient tile	1,628	SF	6.75	10,989

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Building Gross Up (walls and shafts only)	484	SF	2.50	1,210
Bases				
4" rubber base	732	LF	3.50	2,562
Walls				
Class Lab	8,132	SF	3.75	30,495
Lecture hall - acoustic panel	700	SF	15.00	10,500
Column furring and finish				
Column furring and finish	108	SF	25.00	2,700
Ceilings				
Class Lab - Custom	1,590	SF	7.50	11,925
Simulation room - ACT	243	SF	6.95	1,689
Control room - ACT	101	SF	6.95	702
Mock exam rooms - ACT	400	SF	6.95	2,780
Conference room - ACT	353	SF	8.45	2,983
Monitoring room - ACT	212	SF	6.95	1,473
Lecture hall - Custom	1,628	SF	20.00	32,560
Building Gross Up (walls and shafts only)	484	SF	1.10	532
Soffits and bulkheads	1	LS	10,000.00	10,000
				142,828

8. Function Equipment & Specialties

Protective guards, barriers and bumpers				
Incidental conditions	1	LS	5,000.00	5,000
Prefabricated compartments and accessories				
Prefabricated compartments and accessories - misc.	6,422	SF	0.80	5,138
Shelving and millwork				
Media cabinet with glass doors - class lab	1	EA	2,000.00	2,000
Adjustable open shelving unit - control room	1	EA	1,000.00	1,000
AV racks - control room, monitoring room	2	EA	1,250.00	2,500
Mock head walls				
Pediatric bed	1	EA	7,500.00	7,500

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Adult bed	1	EA	10,000.00	10,000
Cabinets and countertops				
Class Lab				
Moveable tables	24	EA		*Group 2 & 3*
moveable chairs	48	EA		*Group 2 & 3*
30" base cabinets	28	LF	575.00	16,100
30" plastic laminate countertop	28	LF	250.00	7,000
12" plastic laminate wall cabinets	24	LF	350.00	8,400
18"x60" table	1	EA	1,000.00	1,000
Simulation room				
24" base cabinets	6	LF	525.00	3,150
24" plastic laminate countertop	6	LF	200.00	1,200
12" plastic laminate wall cabinets	6	LF	350.00	2,100
Control room				
30" plastic laminate countertop	9	LF	250.00	2,250
Mock exam rooms				
24" base cabinets	20	LF	525.00	10,500
24" plastic laminate countertop	20	LF	200.00	4,000
12" plastic laminate wall cabinets	20	LF	350.00	7,000
Conference room				
24" base cabinets	4	LF	525.00	2,100
24" plastic laminate countertop	4	LF	200.00	800
12" plastic laminate wall cabinets	4	LF	350.00	1,400
Monitoring room				
30" plastic laminate countertop	37	LF	250.00	9,250
12" plastic laminate wall cabinets	37	LF	350.00	12,950
Lecture hall				
Lecture hall tables	252	LF	300.00	75,600
Podium	1	EA	1,000.00	1,000
Presentation/display boards, insignia and graphics				
Wall mounted flat screen monitors		EA		*Group 2 & 3*
Class Lab				
Marker board, 18'0"x6'0"	2	EA	3,375.00	6,750
Conference room				
Marker board, 8'0"x6'0"	1	EA	1,500.00	1,500
Marker board, 12'0"x6'0"	1	EA	2,150.00	2,150
Lecture hall				
Marker boards, 12'0"x10'0"	2	EA	3,600.00	7,200

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Interior code and directional signage	6,422	SF	2.00	12,844
Light control and vision equipment				
Projector screens	2	EA	5,000.00	10,000
Projector mounts	2	EA	750.00	1,500
Amenities and convenience items				
Class Lab				
Hand sanitizer dispenser	1	EA	100.00	100
Paper towel dispenser	1	EA	125.00	125
Simulation room				
Hand sanitizer dispenser	1	EA	100.00	100
Paper towel dispenser	1	EA	125.00	125
Wall clock	1	EA	200.00	200
Mock exam rooms				
Hand sanitizer dispenser	4	EA	100.00	400
Paper towel dispenser	4	EA	125.00	500
Coat hook	4	EA	50.00	200
Wall mounted diagnostic set	4	EA		*Group 2 & 3*
Conference room				
Hand sanitizer dispenser	1	EA	100.00	100
Paper towel dispenser	1	EA	125.00	125
Special use equipment				
Stainless steel scrub sink with blade handles		EA		*see plumbing*
Sink and faucet with blade handles		EA		*see plumbing*
				242,857

9. Stairs & Vertical Transportation

No work required				*N/A*
				0

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
10. Plumbing Systems				
Sanitary fixtures and local connection piping	7	Fx		
Scrub sink with blade handles	1	EA	3,500.00	3,500
Stainless steel top-set sinks	4	EA	2,000.00	8,000
Sink & faucet	2	EA	2,000.00	4,000
Sanitary waste, vent and service pipework				
Floor/trench drains and sinks, < = 6"				*existing*
Rough-in sanitary fixtures, including waste, vent and domestic service pipework	7	EA	4,000.00	28,000
				43,500
11. Heating, Ventilation & Air Conditioning				
Piping, fittings, valves and insulation				
Heating hot water	6,422	SF	7.50	48,165
Air handing equipment				
VAV - allow	10	EA	1,500.00	15,000
Air distribution and return				
Galvanized sheet metal ductwork - replace and reconfigure (E)	12,000	LB	12.00	144,000
Flexible ductwork	225	LF	12.50	2,813
Dampers, volume	45	EA	87.50	3,938
Insulation	10,000	SF	4.00	40,000
Diffusers, registers and grilles				
Ceiling, 2 x 2	45	EA	275.00	12,375
Controls and instrumentation				
Direct digital	20	pts	2,250.00	45,000
Test and balance air systems	64	HR	115.00	7,360
				318,650

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
12. Electrical Lighting, Power & Communication				
Machine and equipment power				
Connections and switches, including conduit and cable				
Miscellaneous connections, < 100 A - including, audio-visual, specialty, security, power hardware, fire alarm, BMS and telephone/data equipment power	1	LS	28,750.00	28,750
User convenience power				
Wiremold/receptacles, including conduit and cable (1/65 SF)	100	EA	400.00	40,000
Lighting				
Panelboard breakers, 277 V	84	EA	125.00	10,500
Feeder conduit and cable	200	LF	45.00	9,000
Fixtures/switching, including conduit and cable	6,422	SF	12.50	80,275
Lighting and power specialties				
Lighting control - dimming	1	LS	15,000.00	15,000
Telephone and communications				
Telephone/data outlets, including conduit and cable	6,422	SF	7.00	44,954
Audiovisual rough-in	1	LS	10,000.00	10,000
Alarm and security				
Fire alarm systems	6,422	SF	4.00	25,688
Security				
General - access control	1	LS	5,000.00	5,000
Video camera - monitoring	11	EA	4,500.00	49,500
				318,667

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
13. Fire Protection Systems				
Automatic wet sprinkler system - complete (reconfigure (E))	6,422	SF	5.50	35,321
				35,321
14. Site Preparation & Building Demolition				
Partitions				
Removal	2,483	SF	10.70	26,568
Doors - remove existing				
Single, 3'0"x7'0"	10	EA	245.00	2,450
Double, pair, 6'0"x7'0"	2	EA	490.00	980
Quadruple, quad, 6'0"x7'0"	1	EA	980.00	980
Floors				
Demolish existing	6,422	SF	2.50	16,055
Ceilings				
Demolish existing	6,422	SF	2.75	17,661
Function equipment				
Demolish existing	6,422	SF	2.00	12,844
				77,538
15. Site Paving, Structures & Landscaping				
				0
16. Utilities on Site				
				0