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ACKNOWLEDGEMENTS

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ACKNOWLEDGEMENTS

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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 accommodate 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

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<th>Room Code</th>
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<th>Occupancy</th>
<th>ASF/Ea.</th>
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<td><strong>RENOVATION TOTAL ASF</strong></td>
<td></td>
<td></td>
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<td></td>
<td>5,111</td>
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</tbody>
</table>
2.0 PROGRAM REQUIREMENTS

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.

- 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.

- 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.

- 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

• 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.

• 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.

• 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.
3.0 DESIGN ORGANIZATION

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
3.0
DESIGN ORGANIZATION

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.
3.1 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"
**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.

---

**SPACE REQUIREMENTS AND DIAGRAMS**

**SPACE TYPE:** Instructional

**SPACE NAME:** Simulation

**SPACE ID:** TBD

**AREA:** 240 ASF

**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

RESILIENT FLOORING
UNDERCOUNTER RACEWAY
ONE-WAY GLASS MONITOR WINDOW
30" PLASTIC LAMINATE COUNTERTOP
(2) COMPUTER TERMINALS
(2) MOVEABLE CHAIRS
AV RACK
ADJUSTABLE OPEN SHELVING

1/4" = 1'-0"
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

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

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.

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.

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.
NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

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

1/4" = 1'-0"

(2) PTZ VIDEO CAMERAS
(2) MOVEABLE CHAIRS
RESILIENT FLOORING
STOOL
HAND SANITIZER DISPENSER
12" WALL CABINETS & 24" BASE CABINETS W/ PLASTIC LAMINATE COUNTERTOP
(1) STAINLESS STEEL SCRUB SINK WITH BLADE HANDLES
PAPER TOWEL DISPENSER
WALL MTD DIAGNOSTIC SET
EXAM TABLE
**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**

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<th>REQUIREMENT</th>
<th>SPECIFICATION</th>
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<td>TEMPERATURE</td>
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</tr>
<tr>
<td>HUMIDITY</td>
<td>55% ±5%</td>
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<tr>
<td>VENTILATION</td>
<td>50 FPM, Recirculated Air</td>
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<tr>
<td>AIR CHANGES</td>
<td>6 AC/Hr.</td>
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<td>LIGHTING LEVELS</td>
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<tr>
<td>POWER</td>
<td>110V, 60A, 1 phase</td>
</tr>
<tr>
<td>DATA</td>
<td>(2) ethernet data ports (1) at casework, (1) at opposite wall.</td>
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</tbody>
</table>
NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

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

12" WALL CABINET & 24" BASE CABINET WITH PLASTIC LAMINATE COUNTERTOP
SINK & FAUCET W/ BLADE HANDLES
(2) MARKERBOARDS
STOREFRONT GLASS
RESILIENT FLOORING
(12) MOVEABLE CHAIRS
(2) 36" x 96" TABLES
(2) 30" x 72" TABLES
(2) WALL-MOUNTED FLAT PANEL MONITORS

1/4" = 1'-0"
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.

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
NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

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

10' - 0" x 18' - 8"

(9) COMPUTER TERMINALS
(9) MOVEABLE CHAIRS
CARPET
12" WALL CABINETS & 30" PLASTIC LAMINATE COUNTERTOP, TYP.
UNDERCOUNTER RACEWAY FOR POWER/DATA, TYP.
AV RACK

1/4" = 1'-0"
NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

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.
NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

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

HANDRAIL, TYP.
ACOUSTIC WALL PANELS AT SIDE AND BACK WALLS
(8) LECTURE TABLES
(100) MOVEABLE CHAIRS
CEILING MOUNTED PROJECTOR

MOTORIZED PROJ. SCREEN
(2) MARKERBOARDS
LECTERN
RAISED ACCESS FLOORING WITH CARPET TILE AT FRONT OF CLASSROOM AND IN STORAGE ROOM

1/8" = 1'-0"

0' 5' 10'
NOTE: DIAGRAMS ARE FORREFERENCE 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.
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
NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

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

1/8" = 1'-0"
NOTE: DIAGRAMS ARE FOR REFERENCE ONLY

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

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/ arms
(1) 18" x 60" movable table

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.

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.
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.
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.

g. Can eliminate existing Projection Room.

h. Need to resolve ADA access to front of room.

4. Schedule


SEE ATTACHED
CONCEPTUAL DESIGN
COST PLAN

for

Clinical Skills Renovation
University of California Riverside
Los Angeles, California

DAVIS LANGDON
May 7, 2008
CONTENTS

Page Nos.

Basis of Cost Plan 1
Inclusions 2
Exclusions 4
Overall Summary 5
Clinical Skills Renovation Component Summary 7

DAVIS LANGDON
**BASIS OF COST PLAN**

Cost Plan Prepared From:  
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

<table>
<thead>
<tr>
<th>Gross Floor Area</th>
<th>$ / SF</th>
<th>$x1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Skills Renovation</td>
<td>6,422 SF</td>
<td>331.96</td>
</tr>
<tr>
<td><strong>TOTAL Building Construction</strong></td>
<td><strong>6,422 SF</strong></td>
<td><strong>331.96</strong></td>
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**Breakout Pricing**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Mock Exam Room Renovation</td>
<td>80</td>
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*Please refer to the Inclusions and Exclusions sections of this report*
## CLINICAL SKILLS RENOVATION AREAS & CONTROL QUANTITIES

### Areas

<table>
<thead>
<tr>
<th>Enclosed Areas</th>
<th>SF</th>
<th>SF</th>
<th>SF</th>
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</thead>
<tbody>
<tr>
<td>Clinical Skills Renovation</td>
<td>6,422</td>
<td></td>
<td></td>
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<tr>
<td><strong>SUBTOTAL, Enclosed Area</strong></td>
<td></td>
<td></td>
<td>6,422</td>
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<table>
<thead>
<tr>
<th>Covered area</th>
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<tbody>
<tr>
<td><strong>SUBTOTAL, Covered Area @ ½ Value</strong></td>
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### TOTAL GROSS FLOOR AREA

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>TOTAL GROSS FLOOR AREA</strong></td>
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### Control Quantities

<table>
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<tr>
<th>Ratio to</th>
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<tr>
<td>Number of stories (x1,000)</td>
<td>1 EA</td>
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<td>6,422 SF</td>
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<tr>
<td>Enclosed Area</td>
<td>6,422 SF</td>
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<tr>
<td>Assignable Area</td>
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<td>Class Lab</td>
<td>1,590 SF</td>
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<tr>
<td>Simulation Room</td>
<td>243 SF</td>
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<tr>
<td>Control Room</td>
<td>101 SF</td>
</tr>
<tr>
<td>Mock Exam Rooms</td>
<td>400 SF</td>
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<tr>
<td>Conference Room</td>
<td>353 SF</td>
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<tr>
<td>Monitoring Room</td>
<td>212 SF</td>
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<tr>
<td>Lecture Hall</td>
<td>1,628 SF</td>
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<tr>
<td>Storage</td>
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<td>Building Circulation</td>
<td>1,273 SF</td>
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<td>Building Gross Up (walls and shafts only)</td>
<td>484 SF</td>
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<tr>
<td>Volume</td>
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<tr>
<td>Interior Partition Length</td>
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<td>Finished Area</td>
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<tr>
<td>Plumbing Fixtures (x1,000)</td>
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</table>
## CLINICAL SKILLS RENOVATION COMPONENT SUMMARY

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<tr>
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<tbody>
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<td>1. Foundations</td>
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<td>0</td>
</tr>
<tr>
<td>2. Vertical Structure</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>3. Floor &amp; Roof Structures</td>
<td>14.29</td>
<td>92</td>
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<tr>
<td>4. Exterior Cladding</td>
<td>0.00</td>
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<tr>
<td>5. Roofing, Waterproofing &amp; Skylights</td>
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<tr>
<td>Shell (1-5)</td>
<td>14.29</td>
<td>92</td>
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<tr>
<td>6. Interior Partitions, Doors &amp; Glazing</td>
<td>26.12</td>
<td>168</td>
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<tr>
<td>7. Floor, Wall &amp; Ceiling Finishes</td>
<td>22.24</td>
<td>143</td>
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<tr>
<td>Interiors (6-7)</td>
<td>48.36</td>
<td>311</td>
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<tr>
<td>8. Function Equipment &amp; Specialties</td>
<td>37.82</td>
<td>243</td>
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<tr>
<td>9. Stairs &amp; Vertical Transportation</td>
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<tr>
<td>Equipment &amp; Vertical Transportation (8-9)</td>
<td>37.82</td>
<td>243</td>
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<td>10. Plumbing Systems</td>
<td>6.77</td>
<td>44</td>
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<td>11. Heating, Ventilating &amp; Air Conditioning</td>
<td>49.62</td>
<td>319</td>
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<tr>
<td>12. Electric Lighting, Power &amp; Communications</td>
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<td>319</td>
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<tr>
<td>13. Fire Protection Systems</td>
<td>5.50</td>
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<tr>
<td>Mechanical &amp; Electrical (10-13)</td>
<td>111.51</td>
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<td>Total Building Construction (1-13)</td>
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<td>14. Site Preparation &amp; Demolition</td>
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<td>78</td>
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<td>15. Site Paving, Structures &amp; Landscaping</td>
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<tr>
<td>16. Utilities on Site</td>
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<td>Total Site Construction (14-16)</td>
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<tr>
<td>TOTAL BUILDING &amp; SITE (1-16)</td>
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### CONTINUING COSTS

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<th>Item</th>
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<tr>
<td>General Conditions</td>
<td>15.00%</td>
<td>33.63</td>
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<tr>
<td>Contractor's Overhead &amp; Profit or Fee</td>
<td>5.00%</td>
<td>12.92</td>
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### PLANNED CONSTRUCTION COST

- 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

---

**DAVIS LANGDON**
<table>
<thead>
<tr>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Rate</th>
<th>Total</th>
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<tr>
<td><strong>1. Foundations</strong></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>No work required</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
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<tr>
<td><strong>2. Vertical Structure</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No work required</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Total</strong></td>
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<td></td>
<td></td>
<td>0</td>
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<tr>
<td><strong>3. Floor and Roof Structure</strong></td>
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<tr>
<td>Slabs on grade</td>
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<tr>
<td>Repair existing slabs on grade</td>
<td>6,422</td>
<td>SF</td>
<td>3.00</td>
<td>19,266</td>
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<tr>
<td>revised program</td>
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<td>Recast stepped slab on grade</td>
<td>1,412</td>
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<td>Access ramps to lecture hall</td>
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<td>45.00</td>
<td>9,720</td>
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<td>Miscellaneous</td>
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<td>Misc. iron</td>
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<td>LS</td>
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<td><strong>Total</strong></td>
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<td>91,786</td>
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<td><strong>4. Exterior Cladding</strong></td>
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<tr>
<td>No work required</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
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<tr>
<td><strong>5. Roofing, Waterproofing &amp; Skylights</strong></td>
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<tr>
<td><strong>Total</strong></td>
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### 6. Interior Partitions, Doors & Glazing

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<th>Quantity</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>Partition cores and framing</td>
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<td></td>
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<tr>
<td>4’’ metal stud, blocking</td>
<td>3,678</td>
<td>SF</td>
<td>7.50</td>
<td>27,585</td>
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<tr>
<td>Partition surfacing</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3/8’’ gypsum wallboard taped and sanded</td>
<td>7,356</td>
<td>SF</td>
<td>4.75</td>
<td>34,941</td>
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<tr>
<td>3/8’’ gypsum wallboard underlayment</td>
<td>7,356</td>
<td>SF</td>
<td>3.75</td>
<td>27,585</td>
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<tr>
<td>Paint</td>
<td>7,356</td>
<td>SF</td>
<td>1.75</td>
<td>12,873</td>
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<td>Sound insulation</td>
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<td>Batt insulation</td>
<td>3,678</td>
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<td>1.75</td>
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<tr>
<td>Sealing and caulking</td>
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<td>SF</td>
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<tr>
<td>Glazing</td>
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<tr>
<td>One-way glass monitor window</td>
<td>54</td>
<td>SF</td>
<td>95.00</td>
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<tr>
<td>Storefront glass to conference room</td>
<td>162</td>
<td>SF</td>
<td>75.00</td>
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<tr>
<td>Interior doors, frames and hardware</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install new</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Single, 3’0”x7’0”</td>
<td>7</td>
<td>EA</td>
<td>2,000.00</td>
<td>14,000</td>
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<tr>
<td>Single, 3’0”x7’0”, with 1’0” sidelight panel</td>
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<td>EA</td>
<td>2,250.00</td>
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<td>Single, 4’0”x7’0”, with 2’0” sidelight panel</td>
<td>1</td>
<td>EA</td>
<td>3,000.00</td>
<td>3,000</td>
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<tr>
<td>Double, pair, 6’0”x7’0”</td>
<td>4</td>
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<td></td>
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<td>167,718</td>
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### 7. Floor, Wall & Ceiling Finishes

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<tr>
<th>Floors</th>
<th>Quantity</th>
<th>Unit</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Class Lab - resilient tile</td>
<td>1,590</td>
<td>SF</td>
<td>6.75</td>
<td>10,733</td>
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<tr>
<td>Simulation room - resilient tile</td>
<td>243</td>
<td>SF</td>
<td>6.75</td>
<td>1,640</td>
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<tr>
<td>Control room - resilient tile</td>
<td>101</td>
<td>SF</td>
<td>6.75</td>
<td>682</td>
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<tr>
<td>Mock exam rooms - resilient tile</td>
<td>400</td>
<td>SF</td>
<td>6.75</td>
<td>2,700</td>
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<tr>
<td>Conference room - resilient tile</td>
<td>353</td>
<td>SF</td>
<td>6.75</td>
<td>2,383</td>
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<tr>
<td>Monitoring room - carpet</td>
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</table>
### Conceptual Design Cost Plan

**Clinical Skills Renovation**

**May 7, 2008**

Los Angeles, California

**0168-7769.110**

<table>
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<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Rate</th>
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<td>484</td>
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**Total** | **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

<p>| 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 |</p>
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<td></td>
<td></td>
<td></td>
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<tr>
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<td>Sink and faucet with blade handles</td>
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9. Stairs & Vertical Transportation

No work required                                      N/A

__________________________________________________________________________________________

DAVIS LANGDON

Page 12
### 10. Plumbing Systems

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<tr>
<td>Sanitary waste, vent and service pipework</td>
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<td>Floor/trench drains and sinks, &lt; = 6&quot;</td>
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<td>Rough-in sanitary fixtures, including waste, vent and domestic service pipework</td>
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### 11. Heating, Ventilation & Air Conditioning

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<td>Heating hot water</td>
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<td>VAV - allow</td>
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<td>Air distribution and return</td>
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<td><strong>12. Electrical Lighting, Power &amp; Communication</strong></td>
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<tr>
<td>Machine and equipment power</td>
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<tr>
<td>Connections and switches, including conduit and cable</td>
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<td>44,954</td>
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<tr>
<td>Audiovisual rough-in</td>
<td>1</td>
<td>LS</td>
<td>10,000.00</td>
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<tr>
<td>Alarm and security</td>
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<td>Fire alarm systems</td>
<td>6,422</td>
<td>SF</td>
<td>4.00</td>
<td>25,688</td>
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<td>Security</td>
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<tr>
<td>General - access control</td>
<td>1</td>
<td>LS</td>
<td>5,000.00</td>
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<tr>
<td>Video camera - monitoring</td>
<td>11</td>
<td>EA</td>
<td>4,500.00</td>
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<tr>
<td><strong>Total</strong></td>
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<td>318,667</td>
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**Item Description** | **Quantity** | **Unit** | **Rate** | **Total**
---|---|---|---|---
13. Fire Protection Systems

Automatic wet sprinkler system - complete (reconfigure (E))

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14. Site Preparation & Building Demolition

Partitions

Removal

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Doors - remove existing

Single, 3′0″x7′0″

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Double, pair, 6′0″x7′0″

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Quadruple, quad, 6′0″x7′0″

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Floors

Demolish existing

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Ceilings

Demolish existing

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Function equipment

Demolish existing

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15. Site Paving, Structures & Landscaping

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16. Utilities on Site

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