

EARS – Experimental Acoustics Research Studio Proposal for 2008-2013

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Description:

The proposal presents a five-year (2008-2013) plan of activities and budget for EARS – Experimental Acoustics Research Studio – the new CHASS facility managed by the Music Department. It is located on 1935 Chicago Avenue, Unit B. The space has been leased for five years starting on May 2008, when the Tenant Improvements were officially completed. On September 3, 2008, the installation of the telecommunication infrastructure and the alarm system was completed. Now we are ready to move in.

What is EARS?

EARS offers an audio studio environment for teaching and research on sound, music and technology. It will benefit the Ph.D. programs in Composition and Ethnomusicology of the Music Department, and it will raise the profile of the Music Department in music technology. Besides that, EARS will provide opportunities for fruitful collaboration with other UCR Departments, such as Psychology (psycho-acoustics) and Electric Engineering (digital audio), which can also make use of it.

The facility has a total area of 2,983 square feet, including three studios – a large open studio and two small studios – in addition to technical rooms, rest rooms, and an office (see floor plan). The studios have acoustic treatment and will be used for teaching, research, production, and performance.

The uniqueness of the EARS concept is the integration of studio production and performance in the same facility. Everything can be created, performed, and recorded in the same place.

Goals:

In the next five years, EARS will accomplish three main goals:

1. Establishment of a state-of-the-art facility for electroacoustic music and multimedia, including for teaching, research, composition, and performance.
2. Promotion of interdisciplinary research on and artistic collaboration in electroacoustic music and multimedia involving students, faculty, and guest researchers and artists.
3. Development of a relationship with the entertainment industry in the hopes of finding a corporate sponsor for the facility.

Interdisciplinary collaboration:

In the first half of the academic year 2008-2009, depending on the support we receive from the College, EARS should be completely operational. First, we have to purchase and install the audio and studio equipment. In the following four years, EARS will develop a significant number of research and artistic projects of interdisciplinary collaboration.

Research:

The research projects are focused on sound and space. They will explore the highly sophisticated 28-channel sound system we plan to install in the open studio. We intend to develop new forms of electroacoustic composition and performance using different configurations of speakers and exploring the connections between sound, space, and image. A surround studio

will be installed in one of the small studios. The ethnomusicology lab that Deborah Wong and others want to establish could be installed in the second one.

Artistic projects:

The artistic projects are focused on sound space and audiovisual composition. They will develop collaboration between composers and visual artists. Each year, EARS will present a different artistic project featuring UCR ensembles, students, and guest composers and artists.

Teaching:

EARS will be available for teaching graduate courses on digital composition, such as MUS 256, Computer Music Composition, and MUS 258, Seminar in Music and Technology. The facility can be used by the ethnomusicology lab and advanced recording studio. I plan to create two new courses that are particularly designed to explore EARS technology: "Electroacoustic Composition" and "Audiovisual Composition."

Outline of activities:

2008-2009

- Planning the activities, purchasing, and installing the studio infrastructure, including audio equipment, computers, network, software, furniture, etc.
- Project: Music for Film and Video (UCR is Composing 2009). New compositions for acoustic and electroacoustic music in combination with film and video by UCR students and guest composer Lucca Forcucci (Switzerland).

2009-2010

- Research Project: Sound synthesis and sound spacialization I. Invited scholar: Nathan Wolek (Assistant Professor, Stetson University, FL). This project will develop a programming environment for composition utilizing live electronics and sound space.
- Artistic Project: Multimedia Composition. This will present a new multimedia piece with singers, musicians, and digital images composed by me in collaboration with visual artist Lynn Lukkas (Associate Professor, University of Minnesota, MN)

2010-2011

- Research Project: Sensor and Gesture. Invited scholar: TBA. This project will develop a composition and performance environment exploring sensor technology.
- Artistic Project: Jazz, Multimedia and Electronics. Project with the Jazz Ensemble, directed by Bill Helms, presenting new compositions for jazz ensemble and electronics.

2011-2012

- Research Project: Sound synthesis and sound spacialization II; Invited scholar: TBA. This project continues and expands previous research (2009-10)
- Artistic Project: Sound and space. Projects by Composition students and guest artists exploring connections between sound and space.

2012-2013

- Research Project: Sensor and Gesture II. Invited scholar: TBA. This project continues and expands previous research (2010-11)
- Artistic Project: Sound and Image. Project with composition students and guest artists exploring connections between sound and image.

Conclusion:

In the next five years, EARS should become a nationally renowned center for electroacoustic and multimedia composition. By focusing on the topics of "space" and "image," we will explore Southern California's creative potential and tradition in producing film, video, and visual art.

EARS will also strive to establish connections with other academic centers for music and technology, digital artists, and particularly the entertainment industry. The ultimate goal is to establish a profile of excellence in digital composition and thereby attract graduate students to the UCR Music Department.

Budget Justification:

EARS – Experimental Acoustic Research Studio
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The proposal solicits funds from CHASS to equip and support EARS during a five-year term, 2008-2013. The anticipated total costs of \$210,000 requested from CHASS will provide the audio and studio equipment and resources for developing research and artistic activities.

Equipment:

We request \$150,000 for the purchase and installation of audio and studio equipment and furniture. This amount is requested as an extension of my initial complement, from which approximately \$20,000 is left. It should be expended in the academic year 2008-2009.

Operational budget:

We request \$60,000 for supporting research and artistic projects during the five years, calculated as an operational budget of \$12,000 per year. The money will be used for updating equipment, paying honoraria and other expenses.

Additional funds:

Additional funds and resources will be requested from internal and external sources for supporting EARS, for example, grants for bringing external researchers and artists.

Corporate sponsors:

EARS seeks to develop a relationship to the entertainment industry with the intention of attracting corporate sponsorship.

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UC Riverside, Music Department
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Studio concept and equipment

I – Studio concept:

1) Open Studio: multi channel (Open area room)

Two geometric structures are mounted on the ceiling (see plan):

- a 20' circle; 12 Genelec 8030A, 2 subwoofer Genelec 7070A
- a 50' x 20' grid with 3 vertical (north/south) and 5 horizontal (west-east) bars; 12 Genelec 8030A, 2 subwoofer Genelec 7070A

Quadraphonic PA: four 4 Mackie SRM450 and 4 subwoofers SWA1501 on the extreme corners of the grid.

The speakers hang on the structures. The subwoofers are on frame with wheels

2) Surround Studio: surround 5.1 (Studio 2 room)

5 Dynaudio BM6A, subwoofer Dynaudio BM10S (already purchased)

Stands for speakers (already purchased)

3) Network and Storage (Storage room)

Studio Network Solution globalSAN X-4, Single Client License

Analog / Digital patch bay Matrix 32 x 32 (for routing Digiedsign 192 I/O to the speakers)

Cables for connecting Digiedsign 192 I/O to the Matrix

Cables for connecting the Matrix to the speakers.

II – List of equipment to purchase:

1. Studio design:

2 ceiling structures – circle and grid; see plan

Installation of the ceiling structures

Installation of the speakers, room treatment

2. Room treatment

Panels for the walls of the OpenStudio

Panels and bass traps for SurroundStudio

3. Speakers:

24 speakers Genelec 8030A

4 subwoofers Genelec 7070A

24 kits for hanging the Genelec 8030A

4 Mackie SRM450

4 subwoofers Mackie SWA 1501 (I am not sure if we need a subwoofer matching each speaker)

The subwoofers are on frame with wheels. They should be easily moved to different locations.

4. Mixer:

Mackie Onyx 2480 (PA mixer for performance)

Analog / Digital patch bay Matrix 32 x 32 (for routing Digiedsign 192 I/O to the speakers)

Concept: the user has to be able to work with ProTools HD from two places: the middle of the circle and the middle of the grid. Maybe we can put the computer keyboard, monitor(s) (one or two?) and Digidesign C124 in a rolling cart and move it.

5. ProTools HD OpenStudio

Digidesign HD2 ProTools System

Digidesign 192 I/O

Digidesign 192 D/A Expansion Card

Digidesign C124 Control Surface. I am not sure if we need it. It depends of the concept of mixing.

6. ProTools LE SurroundStudio

Digidesign 003 Factory

7. Network and Storage:

Studio Network Solution globalSAN X-4, Single Client License

8. Cables:

42 cables for speakers and subwoofers (includes 6 additional cables for future speakers on the middle of the grid)

Additional cables

9. Audio interfaces:

2 RME Fireface 800

10. Computers:

1 MacPro with two monitors

1 i-Mac

1 MacPro laptop

11. Software (two licenses of each):

Plug-In for mixing and mastering in ProTools HD and LE (Wave bundle? Which one?)

Plug-In for sampler

Logic

Digital Performer

2 Max/MSP/Jitter

FinalCut

12. Video material:

2 67" LDC Monitors (Open studio)

1 40" LCD Monitor (Surround studio)

13. Furniture:

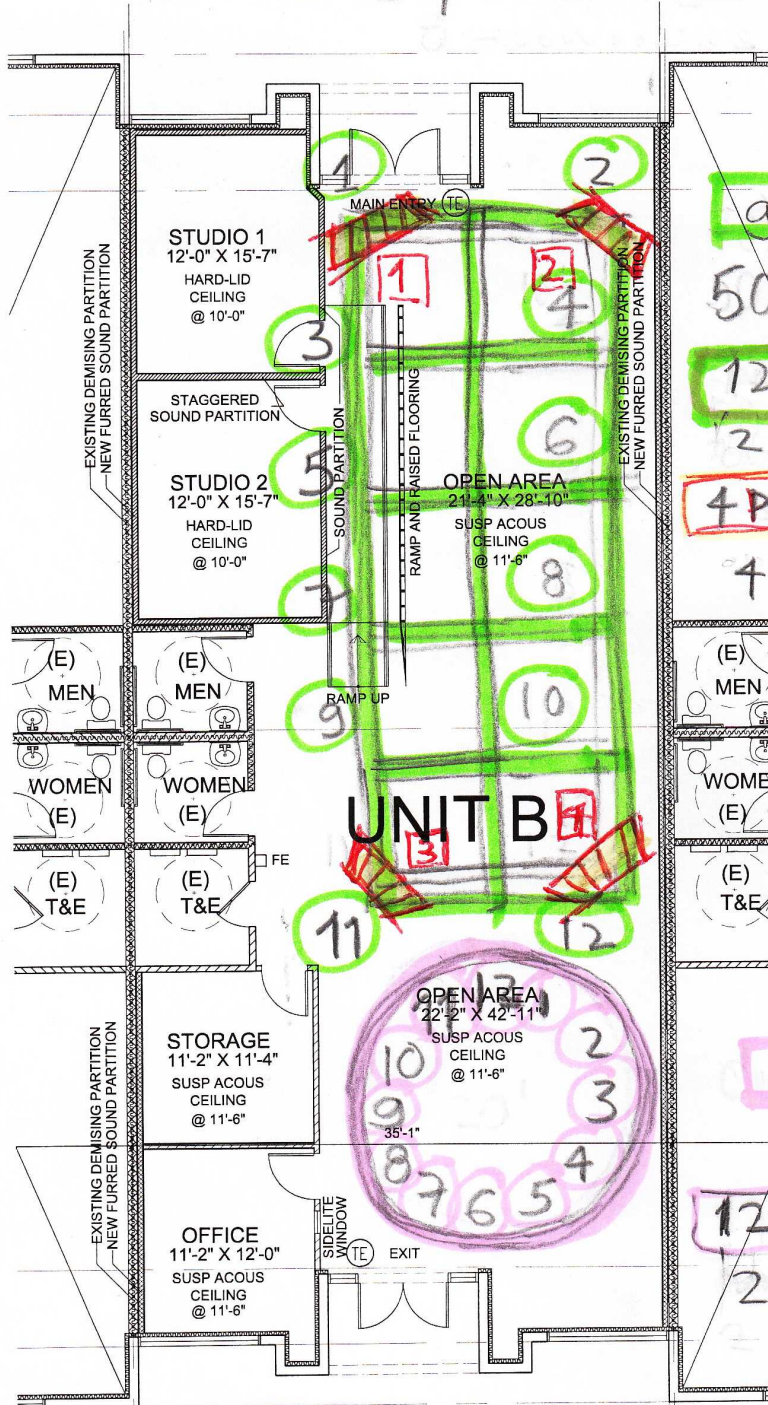
Office: desk, table, chair, shelves. Etc.

Open studio: table, chair, shelves, etc.

Surround studio: table, chair, sofa, etc.

Storage room: shelves, etc.

EARS - Open Studio



grid:

50' x 20'

12 speakers

2 subwoofers

4 PA speakers

4 subwoofers

Totals:

28 speakers

8 subwoofers

circle:

20'

12 speakers

2 subwoofers

NOTE: WINDOWS IN THE STUDIOS SHALL BE CUSTOM MADE WOOD FRAMED WITH THREE ANGLED SOUND RATED INSULATED GLASS.

NEW FURRED SOUND PARTITION TO +12'-0" AFF W/ 3-5/8" MTL STUDS, INSULATION & 5/8" TYPE 'X' GYPSUM BOARD.

NEW SOUND PARTITION TO +12'-0" AFF W/ 3-5/8" MTL STUDS, INSULATION & ONE LAYER OF 5/8" TYPE 'X' GYP BD ON EACH SIDE.

NEW STAGGERED STUD SOUND PARTITION TO +12'-0" AFF W/ 3-5/8" MTL STUDS, INSULATION & ONE LAYER OF 5/8" TYPE 'X' GYP BD ON EACH SIDE.