

SWISHER AUDITORIUM

JACKSONVILLE, FLORIDA

ACOUSTIC CONSULTANT
AUDIO SYSTEM DESIGN
OWNER
ARCHITECT
MECHANICAL ENGINEER
CONSTRUCTION COST
COMPLETION DATE

Siebein Associates Inc.
McGowan Sound Design Group, Inc.
Jacksonville University
The Haskell Company
The Haskell Company
\$ 3,000,000 USD est.
2004 est.

The Swisher Theater at Jacksonville University in Jacksonville, Florida is a 400 seat hall used primarily for technical theater instruction, natural acoustic dramatic performances and amplified "Broadway type" musical productions. The renovation included a complete gutting of the acoustical envelope of the room including both interior walls and ceiling; new stage house; new air-conditioning system; complete redesign of the house sound, theatrical lighting and rigging systems. A new lobby and support spaces were also added. The pit was significantly expanded both in depth and width to accommodate supporting music ensembles.

A series of graphic and computer models were used in the design process to refine the acoustical design and provide information to the design team to explain the necessity for many of the acoustic design features used in the room.

There are 9 primary acoustical design features in the room.

1. An acoustical throat was added at the proscenium opening. This consisted of large curved panels over the forestage and curved panels at the sides of the stage designed as primary sound projecting surfaces.

2. There are a series of large reflecting and diffusing panels suspended below the roof and applied to the side walls. These surfaces were designed to provide an increasing number of reflections from the ceiling and walls as one moves from the front to the rear of the seating area.

3. Layered acoustic side walls with 5 primary components were designed.

A. Diffusing and reflecting surfaces on the interior face.
B. Concrete block and brick back-up layers to reduce sound intrusions.
C. A soffit at the corner with the ceiling to enclose main air duct runs.
D. Low velocity, return air plena located within the layers.
F. Retractable draperies can cover the acoustically productive wall surfaces during amplified performances and be hidden within the wall layers during natural acoustic events.

4. The rear wall has acoustical wall panels for echo control.

5. A series of retractable draperies can cover the sidewalls during amplified performances.

6. The effective ceiling height of the room was raised to the extent possible given the constraints posed by the existing structural system. The acoustical "clouds" were suspended as close as possible to the roof to maximize the room volume.

CRITICAL DATA

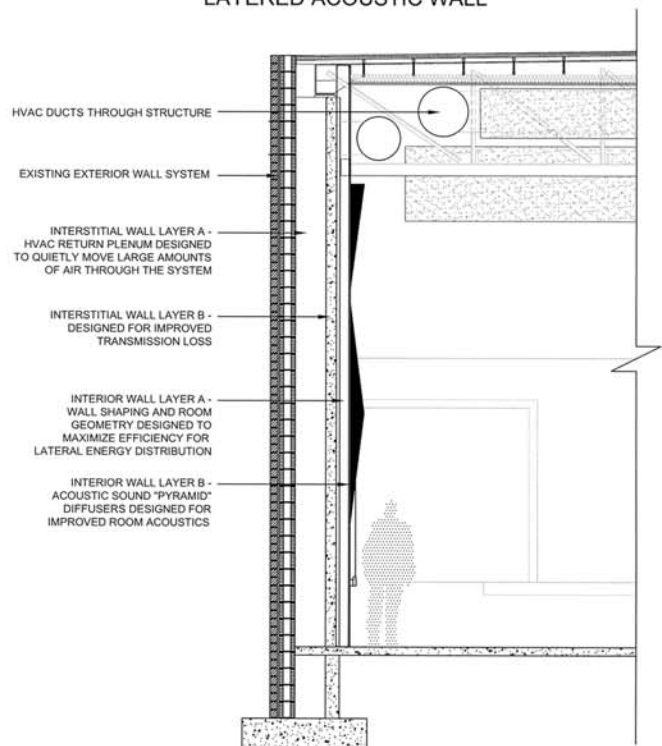
| | |
|---|-----------------------|
| Seating Capacity | 419 |
| Volume | 80,000 cu. ft. |
| Reverberation Time - half occupied | |
| Mid-Frequency | 1.1 - 1.2 sec. |
| Noise Level | NC - 25 |

7. A resiliently-suspended gypsum board ceiling was suspended from the roof purlins to reduce exterior noise intrusions from rain and thunderstorms while maintaining the maximum ceiling height possible. The existing roof over the audience seating area was made of tectum with a built up roof on top supported by steel joists and purlins. It was also very low. While the budget did not allow for raising the roof, both the outside to inside transmission loss of the assembly and the reflective sound production of the ceiling were optimized given the budget and height constraints of the project.

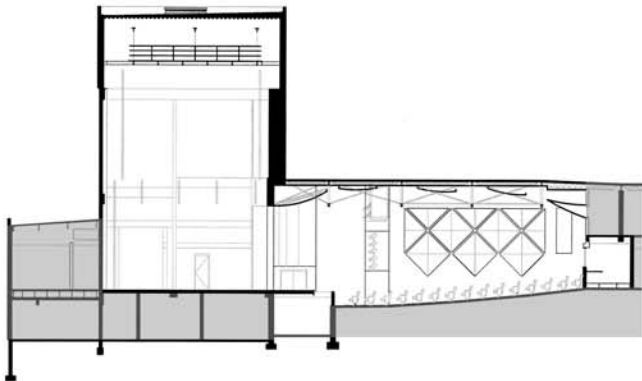
8. Extensive noise and vibration control was provided for the mechanical systems due to very tight space constraints working within the existing building shell. This included selection of quiet air handling units in conjunction with the Mechanical Engineer, re-routing of supply and return ducts to gain adequate length for sound attenuation and adequate size to reduce velocity-generated noise; specification of duct silencers to reduce noise to design NC levels; and diffusers and grilles were carefully selected to meet noise criteria.

9. A full-featured sound system was designed for the room to support the wide variety of performance venues that will use the room.

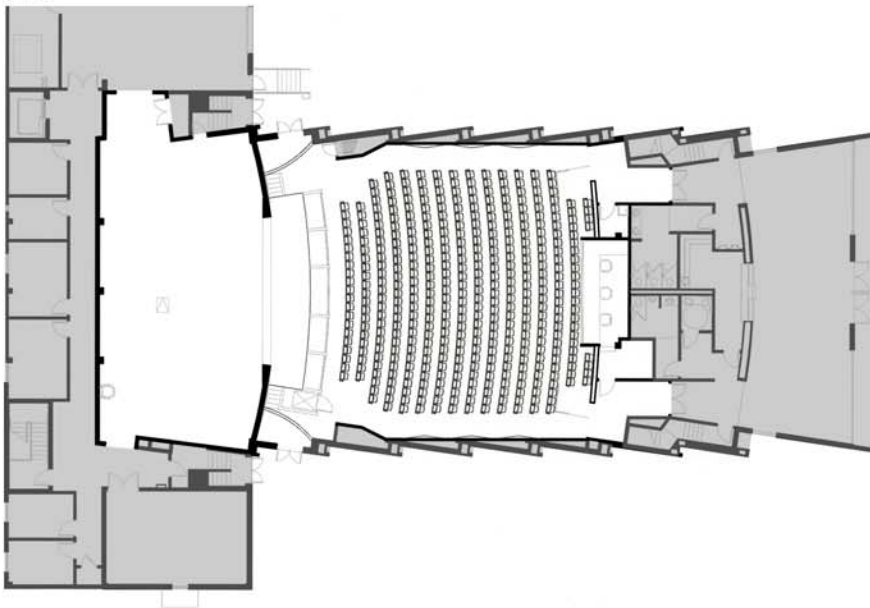
LAYERED ACOUSTIC WALL



SWISHER AUDITORIUM JACKSONVILLE, FLORIDA



0 4 8 16 32
SCALE: 1/8" = 1'-0"



0 4 8 16 32
SCALE: 1/8" = 1'-0"

