COUNTY COUNCIL OF BEAUFORT COUNTY

ADMINISTRATION BUILDING
BEAUFORT COUNTY GOVERNMENT ROBERT SMALLS COMPLEX
100 RIBAUT ROAD
POST OFFICE DRAWER 1228
BEAUFORT, SOUTH CAROLINA 29901-1228
TELEPHONE: (843) 255-2000
FAX: (843) 255-9401
www.bcgov.net

D. PAUL SOMMERVILLE
CHAIRMAN

GERALD W. STEWART
VICE CHAIRMAN

COUNCIL MEMBERS

CYNTHIA M. BENSCH
RICK CAPORALE
GERALD DAWSON
BRIAN E. FLEWELLING
STEVEN G. FOBES
ALICE G. HOWARD
WILLIAM L. MCBRIDE
STUART H. RODMAN
ROBERTS "TABOR" VAUX

GARY T. KUBIC
COUNTY ADMINISTRATOR

JOSHUA A. GRUBER
DEPUTY COUNTY ADMINISTRATOR
SPECIAL COUNSEL

SUZANNE M. RAINEY
CLERK TO COUNCIL

AGENDA
FINANCE COMMITTEE
Monday, April 27, 2015
3:30 p.m.
Executive Conference Room
Administration Building
Beaufort County Government Robert Smalls Complex
100 Ribaut Road, Beaufort

Committee Members:
- Jerry Stewart, Chairman
- Steve Fobes, Vice Chairman
- Cynthia Bensch
- Rick Caporale
- Brian Flewelling
- William McBride
- Stu Rodman

Staff Support:
- Suzanne Gregory, Employee Services Director
- Alicia Holland, Assistant County Administrator, Finance
- Chanel Lewis, Controller

1. CALL TO ORDER – 3:30 P.M.

2. LOCAL 3% ACCOMMODATIONS TAX FUNDING REQUEST / USC-BEAUFORT CENTER FOR THE ARTS RENOVATION PROJECT (backup)

3. ADJOURNMENT

2015 Strategic Plan Committee Assignment
Business License: Direction on Funding Source for Economic Development

UNIVERSITY OF
SOUTH CAROLINA
BEAUFORT

Jane T. Upshaw
Chancellor

April 2, 2015

Mr. Paul Sommerville, Chair
Beaufort County Council
100 Ribaut Road
Beaufort, SC 29902

Dear Mr. Sommerville:

Attached herewith is a request for non-marketing ATAX money submitted by the University of South Carolina Beaufort for its Center for the Arts (CFA). As you will see from the information provided, the CFA has become the main public provider of cultural and arts activities for Beaufort County. In the past year the USCB CFA has served over 22,000 attendees with the arts and cultural programming. With CFA's ability to offer a greater quality of programming because of the 21st Century lighting and sound proposed in this request, both the number of programs and the average attendance will no doubt increase substantially.

The plan calls for the project to be accomplished through investment from USCB, the City of Beaufort, private gifts as well as the ATAX dollars from Beaufort County. Actually, USCB is paying for a little over half the total cost of this update through Capital improvement dollars as well as renovation reserves. We believe that funding from these sources makes an attractive solution to all parties.

In addition to the application, we have included the latest USCB audit report including financial statements. We have also included a report from a nationally recognized arts center facilities expert that USCB engaged to study what was needed to make the CFA's facility equipped for the 21st Century. This report provides evidence that our plan is appropriate for our venue and the population that it serves.

Thanks in advance for your consideration of this request. We stand ready to answer any and all questions that you and your colleagues have regarding this proposal. We look forward to moving this plan forward for a better future of the arts in our County.

Regards,

Jane T. Upshaw, Ph.D.

cc: Mr. Gary Kubic

One University Boulevard • Bluffton, South Carolina 29909 • 843-208-8242 • Fax 843-208-8299 • jupshaw@uscb.edu

UNIVERSITY OF
SOUTH CAROLINA
BEAUFORT

Center for the Arts Renovation

Beaufort County
ATAX Application

Presented by:

Chancellor Jane T. Upshaw

Beaufort County, South Carolina

2014-2015 Accommodations Tax (2% State) Application

Contact Information (please fill in all the below spaces)

Contact Name: Jane T. Upshaw **Title:** Chancellor

Address: One University Boulevard, Bluffton, SC 29909

Email Address: jupshaw@uscb.edu

Contact Phone: 843-208-8242

Project: USCB Center for the Arts Renovation

Event Location: 801 Carteret Street, Beaufort, SC 29910

Grant Requested: $500,000

Project Summary:

The University of South Carolina Beaufort has been the steward of facilities at the Historic Beaufort campus since 1959 when the University was opened as a system campus of the University of South Carolina. We have worked to be a true partner with the community of Beaufort and Beaufort County in providing access to arts and entertainment in the Center for the Arts and want to maintain and grow programming into the future. We have provided the necessary maintenance to keep the facility open and operating, but now must replace an outdated infrastructure, including lighting and electrical wiring and switchboxes to insure patron safety and comfort.

As the Center for the Arts has continued to provide expanded cultural and arts-related opportunities for the area, we have worked diligently to maintain ticket pricing making arts

affordable and accessible to a diverse audience. The range of ticket price currently is $6 for independent films every Monday and $25 for adults for our main stage productions. Children, seniors and military get a reduced rate for all performances.

The Center for the Arts is the only publically owned auditorium in the county, other than those located in the public high schools. With more than 250 evenings of performance space usage and more events happening during the day, we experience a significant amount of wear and tear on the facility far beyond the University's ability to use its Renovation/Reserve to repair and maintain. The University currently contributes the facility, custodial and maintenance services, the utilities, security, financial services and development resources to the Center for the Arts' ongoing operations.

The University's plan is to contribute the largest portion of this renovation effort with deferred maintenance funds provided by USCB from state allocations. In addition, the University will contribute $325,000 of Renovation/Reserve funds, making the University's contribution an equal match to the request for ATAX infrastructure dollars from the county and the city, as well as private donors.

With this update to the CFA, USCB will have the opportunity to bring in state-of-the-art performances currently unavailable in the county, providing a better cultural experience for our patrons. It will allow the CFA to become even more integrated into arts education at our county schools by offering access to the latest presentation and performance technology.

Most importantly, this update will prevent the CFA from "going dark" due to an antiquated lighting system with no replacement parts available. It will also allow us to better serve the aging population that is such a large part of Beaufort County. When the seats are replaced as a part of this plan, we will be more able to accommodate patrons with hearing impairments and physical disabilities. The CFA is a critical component of what attracts, individuals, families and businesses to locate here. This update will make that case even stronger.

We are asking Beaufort County to partner with USCB, the city of Beaufort, local entities and donors in this effort. This update to facilities will allow us to increase the quality of our current offerings and expand our programming to attract world-class performers. With your help, we will provide a wider range of education and entertainment options in Beaufort County for its residents and its visitors to enjoy.

Budget (Listing of all partners involved in the effort):

Partners in the USCB Center for the Arts Renovation Campaign

Name	Source	Amount
University of South Carolina Beaufort	Deferred Maintenance	$600,000
	Renovation/Reserves	325,000
Beaufort County	ATAX Funding	500,000
Private Fundraising	Private Donors	250,000
City of Beaufort	ATAX Funding	125,000
	Total:	**$1,800,000**

Tourism

In Fiscal Year, 2014, The CFA sold **10,837** tickets. Of those total tickets sold, nearly 4% came from zip codes outside of Beaufort County. This number is based on evidence gathered from our on-line ticket sales system and does not include walk-up ticket sales. Without doubt, we believe that number would be even higher if we tracked out of town buyers who walk up and purchase tickets.

For that same year, the USCB Festival Series sold 1,371 tickets over 5 performances. This year, the Festival Series is projected to sell over 1,550 tickets with its final concert in April.

In addition to USCB-affiliated performances, all screenings and the closing awards ceremony of the Beaufort International Film Festival are held at the CFA, with none of the BIFF tickets included in the above ticket counts. Also, the CFA is the home of Books Sandwiched In, including 8 lectures with an average attendance of 200 each, the Beaufort Memorial Hospital Foundation Duke Symphony Orchestra concert, The Collaborative Organization of Services for Youth which has nine sessions with over 100 attendees each and the Aunt Pearly Sue and the Gullah Kinfolk Christmas, as well as the closing ceremony of The Penn Center Heritage Days. We also host the Beaufort Shakespeare Rep theatre and serve as the home of recitals for two local Dance Studios.

The Beaufort Historical Society board meets in our auditorium, as well The Santa Elena Foundation Panel Discussion of Scholars. We will also host in its first year, the NCAAP-sponsored, ACT-SO (Afro-Academic, Cultural, Technological and Scientific Olympics) auditions for Beaufort County.

Over the course of the year, we hold 12 different art shows, attracting over 1,000 patrons and provide local artists a way to market their art for sale.

In addition to all of this, we offer the Air Force and Marine Corps Band concerts, the Osher Lifelong Learning Institute Concert Band performance, The Beaufort County Ministerial

Alliance's MLK Memorial Service and the USCB University Chorus.
In 2014, 1800 children between kindergarten and 12th grade came to our school shows, included in the total number, from across the county in public and private schools.

So, we have hosted **11,360** total attendees from outside organizations. Unfortunately, we have no way to tell how many of these were out of region attendees. This number, added to the **10,837** tickets the CFA sold, means that **22,197** citizens were served through the USCB Center for the Arts.

With this update, we will be able to expand both the number of citizens who visit from Beaufort County and those from outside of Beaufort County – The bottom line is that we will be able to expand and provide even more great entertainment options for even more people.

Financial Statements (please provide a copy of your organizations audited financial statements for the last two years and your organization's most recent 990 tax form)

See Appendix A – USC Beaufort Financial Statement – FY13
See Appendix B – USC Beaufort Financial Statement – FY14

Note: By submitting this application, the organization certifies that it does not discriminate in any manner on the basis of race, color, national origin, age, sex, disability, religion, or language, and that all funds that may be received by the applicant organization from Beaufort County, South Carolina will be solely used for the purposes set forth in this application and will comply with all laws and statutes, including the South Carolina Code of Laws regarding allocations of Accommodations Tax Revenues. The South Carolina Freedom of Information Act defines a "public body" as any organization or corporation supported in whole or in part by public funds or expending public funds. Your organization's acceptance of public funds from Beaufort County may cause your organization to come within the meaning of "public body" as defined by the Freedom of Information Act. S.C. Code Ann. §30-4-10, et seq. (Supp. 2002). Accordingly, this is to advise that by accepting public funds, your organization may be subject to the South Carolina Freedom of Information Act.

Financial Information

1. Federal Tax ID Number (Example 12-3456789)

57-6001153

2. Is your organization tax exempt? If so, please provide a copy of your determination letter.

USC Beaufort is not sales tax exempt. The University is exempt from income tax as an educational institution (agency of the State of SC).

3. What is your fiscal year (12-month accounting period)?

July 1-June 30

4. Are your financial statements based on accrual basis or cash basis?

Accrual basis

5. If there has been a significant change in revenues or expenses from prior periods, please explain.

An increase in appropriation revenue between FY 13 and FY 14 of $1.2 million was offset by an increase in salaries and fringes and service and supply expenditures of approximately $1 million.

NOTE:
Please attach all documentation to the e-mail and send with this application.
If your document(s) exceed 12 megabytes, you will need to send them in separate e-mails. (There is a 12 megabyte size limit on e-mail attachments.)
Please include in the subject box how many e-mails we should anticipate from your organization (example: e-mail 1 of 2, e-mail 2 of 2, etc.)
E-mail documents to atax@bcgov.net

Failure to appear at your interview will result in zero allocations. Each applicant will receive an email with the date and time of their interview after the application process is closed.

Focus Interview Presentation on the following items (Answers listed above, at the end of the question or in attached documents)

What are your other funding sources? **$1.3 million from Deferred Maintenance, Renovation/Reserves, Private Donors and City of Beaufort ATAX Funding**
What was your previous year's operating budget? **$332,500 (CFA Programs)**
How is your event/project going to benefit tourism in Beaufort County? **This is not a marketing request that is a part of the Accommodations tax. An updated theatre will open opportunity for larger and more technical acts that will attract patrons from outside the local area.**
How many people attended your programs? **22,197**
How did you determine this number? **By on-line tickets sales and counting attendance of non-ticketed events.**
If this is the first year for the event, how many people are you projecting? **N/A**
Of those who attended last year, how many came from outside Beaufort County? **433**
How did you determine this number? **4% of 10,837 tickets sold and using the information we have in on-line ticket sales addresses**
Would you advertise with other organizations? **We do – All Print Media in Beaufort County, Adams Outdoor, Radio and Chamber of Commerce**
Please have an event/program plan available to substantiate your funding request. **N/A**
Have you used all the money provided in the past? **None has been provided in the past**
What is the time frame for the spending of funds? **Renovation project work will begin in the summer of 2016**

Appendix:

Appendix A: USC Beaufort Financial Statement – FY13
Appendix B: USC Beaufort Financial Statement – FY14
Appendix C: Theatre Consultant Study
Appendix D: Consultant PowerPoint Presentation Summary Findings

CONSOLIDATED COMMENTS NOTED DURING SYSTEM REVIEW

USC Center For The Arts
Beaufort, South Carolina

16 May 2012
Revised: 2 February 2014

Theatre Consultants Collaborative, Inc

PRINCIPAL OFFICE
6600 Manor Hill Court
Chapel Hill, NC 27516
T 919.929.7443
F 919.929.4519

ISSUED FROM
519 Polk St.
Raleigh, NC 27604

T 919.546.0288

Consolidated Comments Noted During System Review
USC Center For The Arts Beaufort, South Carolina
16 May 2012 Revised

INTRODUCTION

1. Theatre Consultants Collaborative was contracted to provide a review of the Performance lighting System and associated equipment. On April 24th Curtis Kasefang of our Raleigh, NC office visited and met with Bonnie Hargrove, Jason Lake and Eddie King. During the visit we toured the facility, reviewed the equipment and discussed how the facility is being used and in what ways the program is envisioned to change.

2. Elements reviewed in detail:

2.1. Dimmers

2.2. Control

2.3. Performance Lighting Fixtures

2.4. Performance Lighting Power Distribution

2.5. The function of the Architectural Lighting Fixtures

2.6. The function of the Emergency Power System.

3. Limitations of our review:
   A. Theatre Consultants Collaborative is not an engineering firm and does not provide engineering services. Our comments address the apparent function of the equipment as well as facilities relative to functional norms.
   B. Observation of conditions noted are not intended to be a complete inspection of all conditions on the site which are potentially harmful to people, systems or to the building(s) and site. Failing to report such conditions does not imply that they do not exist.
   C. Destructive or other special testing was not performed.
   D. Observations are based solely on the examination of readily accessible and visible areas and systems. An inspection was not made of areas or systems that are concealed, obstructed or otherwise not accessible. No significant appliances, finishes or coverings were moved in the process of the inspection.

THE FACILITY

The Center For The Arts is a multi use arts facility that includes classrooms, labs, gallery space and a 461 seat theatre. The Gallery doubles in function as the lobby. It is expected that the downtown campus location and the campus's shifting focus more towards the arts will result in an ever increasing activity level. Currently the primary audience is from the community which includes a substantial aging population.

Theatre program includes:

- 2-3 Community theater Shows per year.
- Children's Theatre
- Community rentals
- Beaufort Orchestra
- Dance Recitals
- Film Festival which features digital projection of films from Emerging pictures and "Live from" events

DETAIL PERFORMANCE LIGHTING SYSTEM REVIEW

General

1. The size and type of event that uses the facility uses the house lighting system making a company switch unnecessary for the current programming.

Dimmers

1. The installed dimmers are Lighting Methods Inc L86 dimmers. There is a single rack that is partially populated with 50a (6kw) and dual 20a (2.4kw) dimmer modules. We observed 15 @ 50A dimmer modules, 49 @ dual 20a modules and 31 blank modules in the rack. One slot was unpopulated. In addition there were a number of blank and presumably dead modules stacked on the floor adjacent to the rack. We installed

a blank module in the open slot we found in the rack to help maintain the designed airflow.

2. Lighting Methods Inc was acquired by Electronic Theatre Controls around the time of instillation of these racks and this model went out of production shortly thereafter. This rack was in its time the workhorse of the performance lighting industry. They were known for their durability and reliability.

3. Users report widespread module failures and intermittent failures.

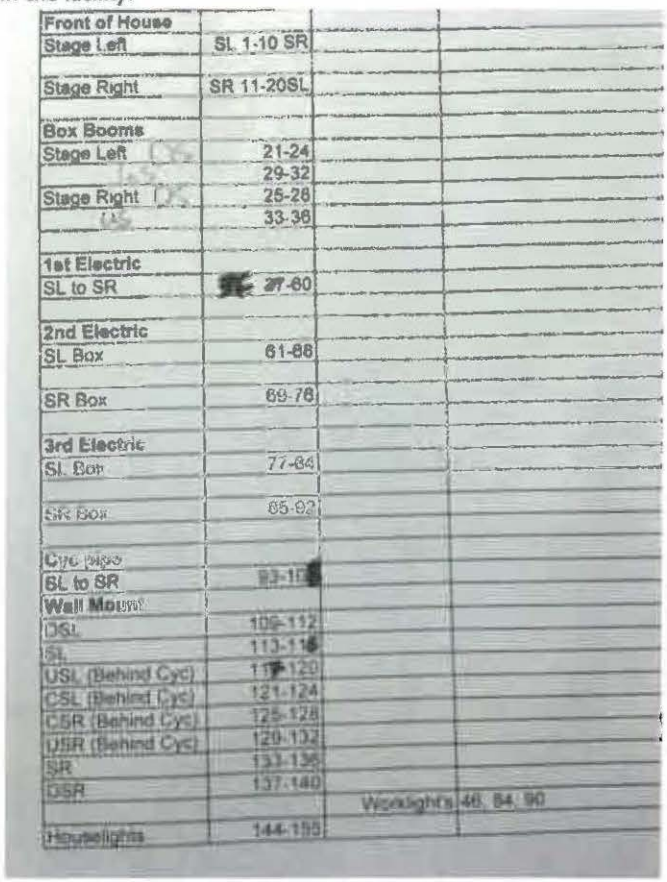
4. We observed many receptacles taped off indicting that the dimmers did not function.

5. A posted dimmer location schedule accounts for 155 dimmers.

6. No 50a receptacles were observed in the facility.

7. Slots with 50a dimmers were inspected and appear to have been wired for dual 20a dimmers.

8. The dimming system has a 400a 3phase 120/208v feed



Front of House	
Stage Left	SL 1-10 SR
Stage Right	SR 11-20SL
Box Booms	
Stage Left	21-24
	29-32
Stage Right	25-28
	33-36
1st Electric	
SL to SR	37-60
2nd Electric	
SL Box	61-68
SR Box	69-76
3rd Electric	
SL Box	77-84
SR Box	85-92
Cyc Pairs	
SL to SR	93-1[illegible]
Wall Mount	
DSL	109-112
SL	113-11[illegible]
USL (Behind Cyc)	11[illegible]120
CSL (Behind Cyc)	121-124
CSR (Behind Cyc)	125-128
USR (Behind Cyc)	129-132
SR	133-136
DSR	137-140
	Worklights 46, 84, 90
Houselights	144-155

Circuit Distribution

1. The circuit distribution appeared to be in very good condition given its age. We did not observe any damaged receptacles.

2. Labels are peel and stick 2" black numbers on a yellow field.

3. Front light positions are very limited, but are reportedly sufficient for the current program.

4. Circuits appeared to be grounded.

5. Circuit counts per schedule:

Control

1. The facility has two ETC Expression consoles. These are quality consoles very common in limited scope installations. These consoles went out of production a few years ago.

2. No DMX distribution was observed.

House Lighting

1. The house lighting control system is an ETC Analog Address system. This is a very simple and reliable system.

2. The majority of the overhead lights in the audience chamber were not working. The users report intermittent failures and that the lamps were all recently replaced. We believe the root cause is failure in the dimmer rack.

3. None of the step lights appeared to be functioning. These fixtures provide egress path lighting.

Emergency Lighting

1. No emergency transfer switch was observed.

2. When power to the dimmer racks was killed no lights came on.

3. The emergency power battery bank did not appear to function. When the test button was pressed the system made oscillating sounds suggesting either insufficient battery charge or control issues.

Lighting Instruments

1. A variety of lighting instruments dating from before 1992 were observed. Many were clearly much more than 20 years old.

THE STATE OF PERFORMANCE LIGHTING TECHNOLOGY

A Time Of Transition

Over the last few years high efficiency sources have become viable for the entertainment industry. Several years ago LED based fixtures began entering the market that provided good saturated color washes. The early ones exhibited stepping in their dimming and many have short lives because of poor thermal management. LEDs by their nature provide a discontinuous spectrum of color. Early LEDs have very poor color rendering because of holes in their spectrum. Lately LED based fixtures have gotten to a point in their design that has the better quality units them fully dimmable, reliable, provide good color rendering including skin tones and are well designed. This is achieved by using a mixture of doping material ether in a "white" LED or a mixture of saturated color LEDs in color mixing fixtures. This spring saw the arrival of a mature framing spotlight product with an LED engine.

A Word About Energy Efficiency.

Conventional stage lighting fixtures relied on relatively efficient high wattage halogen sources. The most efficient fixtures allow slightly more than 50% of the light out the front of the unit. This efficiency is usually

squandered by placing color filters (gels) in front of the lamps. In the case of backdrop lighting these colors tend to be primary colors, which are then blended to achieve the desired color on the backdrop. The wavelengths filtered out are converted to heat. Unfortunately this yields an efficiency of less than 1%.

Color mixing LED fixtures in the theatre are disproportionately more efficient than their counterparts in home or office applications because they start with primary colors and do not employ filters. Because of this much more intense saturated colors are available and the net light efficiency is 8-10 time that of the conventional fixtures. In drop lighting one uses a 120w fixture in place of a 1,000 watt lamp. In front lighting it is 120w LED in place of 575w lamp.

Sustainability and Beyond

In addition to the reduced direct energy consumption there is also an equal reduction in cooling loads. The LED fixtures we specify generally have a 50,000 hour life instead of a 1,500 hour life. Between this life and the elimination of color media there are no expendables with these fixtures. These fixtures also dim through on board pulse width modulation, so dimmer racks are unnecessary. The circuit density can also be greatly reduced because where one needed roughly one dimmer per fixture for reasons of control, one needs one switched circuit for 10 fixtures: less power distribution. The color changing also means a need for less fixtures. In the past 2 or more fixtures were hung adjacent to each other with different color filters, now one will do. These fixtures are substantially safer than conventional fixtures because they are significantly cooler.

Cost

LED fixtures in and of themselves are roughly 5-7 times the cost of a conventional fixture. In new construction or renovation most if not all of these costs are offset by the infrastructure reductions. Where they are not fully offset the reduced electricity, cooling and expendable costs rapidly pay back the premium.

OUR RECCOMENDATIONS

The Big Picture: Move to LED fixtures.

Dimmers

1. We are very concerned about the use of 6kw dimmers in 2.4kw slots. On a practical level this means that branch wiring designed for a 20 load is protected with a 50a breaker. These 6k modules should be removed immediately.

2. As a stop gap measure we recommend acquiring surplus dual 2.4kw LMI dimmer modules. Many were made so we suspect they should not be too hard to find a little cost.

3. We recommend eliminating the dimmers and replacing them with motorized breaker panels. 40-80 circuits would be sufficient for the lighting positions available, depending on the transition strategy you adopt: the quicker the transition the fewer motorized breakers. We recommend Lyntec DMX driven motorized breaker panels which use Square D breakers because of their robust design and long life.

4. We would recommend wiring one circuit to several receptacles and relabeling the receptacles accordingly.

Distribution

1. As part of the dimmer replacement, rewiring and relabeling the contractor should repair any failed receptacles.

Control

1. The transition to LED fixtures will require replacement of the console with a console optimized for LED fixtures. This console will have many more channels and a user interface that masks the complexity of color matching with a simple user interface. This console should have a tablet based remote to eliminate the need for multiple consoles. The ETC Ion in it's 2,000+ channel configuration would be a good choice.

2. DMX will need to be distributed throughout the audience chamber and the stage. DMX is an old robust RS-485 based lighting control protocol. It can run on Ethernet wire, which is what we recommend doing.

3. The architectural control system will need to be updated to a system that can deal with LED houselights.

House Lighting

1. While none of the existing fixtures appear to have failed, we suggest changing the house lights to an LED based fixture that is dimmed via a control circuit. In terms of electrical usage these are the most impactful fixtures because they are on for many hours each day. There are several fixtures coming onto the market with a variety of control strategies. One caution: contrary to manufacturer claims we have yet to see a line voltage dimmed LED fixture that has acceptable performance. Stick with fixtures that need constant power and dim via a control signal.

2. We suggest changing the step lights to an LED based fixture. This is a life safety item.

Emergency Transfer

1. We recommend installing an emergency lighting transfer switch to provide backup power and control signal to move the fixtures to full intensity in the event of an emergency. In a system with LED houselights either a DMX Emergency Transfer Switch or dedicated emergency lights is required too. This is a life safety item.

2. We recommend replacing or refurbishing the emergency power system. In our experience systems that rely on a shared generator tend to work when you need them.

Consolidated Comments Noted During System Review
USC Center For The Arts Beaufort, South Carolina
16 May 2012 Revised

Performance Lighting instruments

1. Replace with LED based fixtures.

1.1. Framing Spots could be the Source 4 LEDs with the Studio HD LED set.

1.2. Wash fixtures could be ETC D-40 with the Lustr+ LED set. Note these should be in sufficient density or combined with D-40 Studio Tungston LED set fixtures to provide 100FC for the orchestra onstage.

1.3. Backdrop Lighting fixtures should change to Selador strip lights with Vivid LED sets.

2. Acquire 12 or more backpack dimmers which provide dimming at the fixture to support a small inventory of legacy fixtures.

Cost

1. Power and control:

1.1. Stop gap LMI modules: $5,000

1.2. Performance Lighting Power and control:
Equipment Motorized Breaker Panels
Emergency Lighting Transfer Switches
Architectural Lighting Controller
Performance Lighting Controller
DMX Control Distribution
Subtotal PL Equipment 115,000
Electrical Install 85,000 (Note that this is a guesstamate at best)
Total $200,000

1.3. Performance Lights:
Framing Spots 65 at 2,500 + accessories
Wash Fixtures 26 at 1,350 + accessories
Backdrop Lights 14 @ 2,500 + accessories
Back Pack Dimmers 12 @ 450
Control cable and accessories
Total $ 252,000 (User installed)

1.4. House Lights:
Down Lights 42 @ 1,200
Side Wall Sconces 10 @ 1,200
Step Lights in side Aisles 12 @ 400
Control Hub 1@ 1200
Install (Guesstimate) 15,000
Total $ 95,000

1.5. Emergency Power: No Idea
LED Houselights will draw no more than 6 kw
LED Stage worklights will draw no more than 720w

Americans With Disability Act Compliance

1. We noted only 2 locations for wheelchair seating.

2. Seats are worn.

3. No Assistive Listening Systems were provided. Listen Technologies makes a Stationary FM based ALS system in which the receivers can either be headsets or induction loops. This system is very cost effective. http://www.listentech.com/assistive-listening.html One must plan on the source of the program feed. This is commonly switched between a direct feed from the house sound system for amplified events and one or two dedicated microphones for unamplified events. One may acquire a multichannel transmitter and place alternate program on the second channel, for instance visual description for the visually impaired or simultaneous interpretation.

Energy Efficiency

1. We noted that the auditorium ceiling is insulated, but the roof is not. There are significant opening between the auditorium ceiling and the attic, which is very hot during the summer months. It is recommended that either the roof be insulated or at least a radiant barrier be applied.

Fire Protection

1. We noted a drencher system for code required separation between the audience and the stage. This consists of a velour drape which lowers to close the opening and a sprinkler system that wets the entire drape to keep it from burning. There did not appear to be the usual smoke seal between the curtain and the proscenium wall.
Drencher systems are unusual. We generally see deluge systems or a fire curtain. Deluge system create a water curtain to seal the opening and as the name suggests put a enormous amount of water into the facility. Fire curtains do not employ water.

2. We noted a number of unprotected penetrations through the proscenium wall. 3M makes a product that consists of a hinged steel sleeve with intumescent paint on the interior. It can be used to retrofit fire protection in these instances. http://www.shop3m.com/3m-fire-barrier-pass-through-products-r15wnkhp12.html We prefer the 4" square versions because they allow many more cable to pass than the 4" round devices.

3. We noted no smoke or heat detection in the theatre.

Electrical

1. The Dressing Rooms we the site of electrical code violations. Code specifically calls out for lamps with open ended cages around dressing room mirrors. It also requires that the outlets above the counters be switched with indicator lights outside the dressing rooms. Both these requirements are in place to avoid dressing room fire from cloth touching a hot lamp or an appliance being left on. Reference NEC 520-70 – 520.72.

2. There were only 2 circuits of convenience outlets onstage. This is usually insufficient. We recommend each convenience outlet have a dedicated circuit. This allows several power tools to be used without concern about overloading circuits.

3. We usually see an isolated power, isolated ground system serving the sound equipment. These receptacles are usually hospital grade and orange in color for easy identification. None was observed. What was observed was hum in the sound system. See noted in the sound system area.

Noise In The Sound System

1. We noted 3 separate hums in the sound system:

1.1. 60 cycle hum that worsened as the lights were dimmed. This is the result of noise created on the building electrical system by the dimming system and / or sound wire being run parallel to dimmer power circuits for substantial distances.

1.2. Ground hum present when the lights are off. This is the result of the sound equipment as a whole having multiple paths to ground of varying resistances. These tend to vary based on soil moisture and building moisture. This can be from the sound power ground being tied to building steel at multiple points, shielded cables having their shield tied to ground at both ends, or equipment being improperly grounded. Usually it is a combination of the three conditions.

1.3. Digital chatter. We noted a high frequency whine at a low level in the sound system. This is usually the result of a digital line and a microphone level or line level audio cable being immediately adjacent for a significant distance creating induced noise.

2. There are a number of ways of correcting this.

2.1. The most common way is to install a shielded isolation transformer that feeds an isolated ground panel board dedicated to the sound system circuits. The panel board's isolated ground would be tied to ground at the transformer. Each circuit run from this panel would consist of a hot, a neutral and a ground wire that is run to a hospital grade orange colored isolated ground receptacle. The isolated ground and the conduit ground would be separate. The sound system would be powered from only these receptacles fed from this panel. Usually additional receptacles are located around the stage for any musical instruments that feed the sound system directly.
This is accompanied by strict grounding of signal cables to the isolated ground bars at one end only. Equipment cabinets need to be carefully isolated from their surroundings with non-conductive materials. Signal receptacles must be of a type that have their grounds isolated from the faceplates or faceplates must be non-conductive.
Signal cables must be carefully run to keep them separated from power runs to avoid induced noise.

2.2. A second method would have long cable runs be digital. In this case the stage boxes on either side of the stage would be remote analog to digital converters which would feed the audio console over Ethernet. The signal returning from the console to the digital signal processor would be converted to digital at the console and run digitally to the amps. In this system since runs between locations are digital induced noise and ground loops are eliminated. It is still possible, although less likely to have noise from dirty power. The conversion from conventional lighting equipment will usually cure this issue, because the largest source of dirty power, SCR dimmer, is eliminated.

3. Sound System

3.1. The abandoned right and left speakers should be demounted. They are just visual clutter.

3.2. Film

A. Moving from video to digital cinema should provide a richer audience experience. It does beg the question of the sound system. The current system is good however cinema people hate it when films which are mixed for cinema speakers are played back on 2 channel systems. Films are mixed for left, center and right speakers located behind the screen.
B. As this is a significant revenue opportunity it would make sense to plan on an upgrade path for the overall system.
C. Plan on 7.1 sound (Left, Center, Right, Left Side, Right Side, Left Rear, Right Rear, Subwoofer.) This is in addition to the existing playback speakers.
D. The surround speakers could be low profile speakers located above each side door except the first. These could be configured to take inputs from the performance sound system too.
E. L, C, R and Sub are located behind the screen with the high frequency cones roughly in the middle of the screen. This could be done by placing cinema speakers on wheeled platforms so they could be stored at the rear wall or in a storage room when you need the full stage.
F. Speakers behind the screen require a sound screen, which has lots of perforations.
G. The digital cinema projectors have come way down in price. They currently weigh in at about $64,000 including an interface for a second source, lens and lamp. Beware of used digital cinema systems. The earlier ones will not show films released to the new security standard.
H. You should augment this with a high definition send from the stage for lectures. Crestron Digital Media 8G products will transport High Def Video, Audio, and Ethernet over a single piece of shielded Cat 6. I would recommend considering this.

3.3. Other than the hum and the ALS noted earlier the rest of the sound system is modest, but apparently workable. You might consider adding a center speaker above the proscenium for speech reinforcement and subwoofers in the box boom locations behind the lights for more low end.

4. Rigging

4.1. The existing system consists of 12 pipe dead hung from the roof steel plus the drencher curtain and the cyc which is on a hand line. There is a pin rail stage left at the catwalk level. Give the fact that a fly tower was built at significant expense and that George Izenour was the theatre consultant on the project it is a bit of a mystery why most of the pipes are dead hung. This usually happens in a budget crunch and is done with the intent of coming back at a later date and putting in winches or line sets. Prior to undertaking such a thing it would be important to have a structural engineer tell you what the roof steel can hold.

4.2. The pipe are hung from the roof steel using chain that appears to be rusting and is likely not rated for overhead lifting. We also note that the 1st electric is elevated to an unfortunate height and that several pipes are breasted to provide clearance around the screen. We recommend that everything be rehung with rated hardware by a professional rigger and in the process the breasting lines be removed.

4.3. Assuming the structure can hold it, we would recommend that the replacement projection screen be a framed screen flown from a fixed speed winch. This will allow it to take up less space. This would run roughly $19,000.

4.4. If money allows it would also make sense to fly the 2 existing empty pipes and add two more using a variable speed winch system. These run roughly $23,500 per winch.

5. Drapery

5.1. We recommend that a black traveler be added downstage of the screen. This drape that opens and closes by tracking horizontally would allow you to trim the sides of the screen for films that are in 1.33:1 format. When open this traveler would form legs for making onstage. This drape and track would cost roughly $16,000 installed in the context of other rigging work.

5.2. We recommend a 2nd drape be added upstage of (behind) the screen. This could either be another traveler of could be a flat panel on a winched lineset (which would be preferable.) This would allow the forestage to be used while scenery for another event is sitting behind the flat panel. The Drape is roughly $7,200 and the winch could be fixed speed at $19,000.

Background

Curtis Kasefang, Principal
Theatre Consultants Collaborative, Inc

April 2012 TCC visits to review failing lighting system.

May 2012 TCC writes a report on the status of the following systems:

- Lighting System
- Sound System
- Rigging
- Drapery
- Other Observations

Overall Findings

- Facility is in remarkably good shape given its age.
- Equipment systems were operating well beyond their designed life.
- We credit the staff for taking such good care of the University's assets.
- It is time for major equipment replacement and a minor renovation.

Lighting System Findings

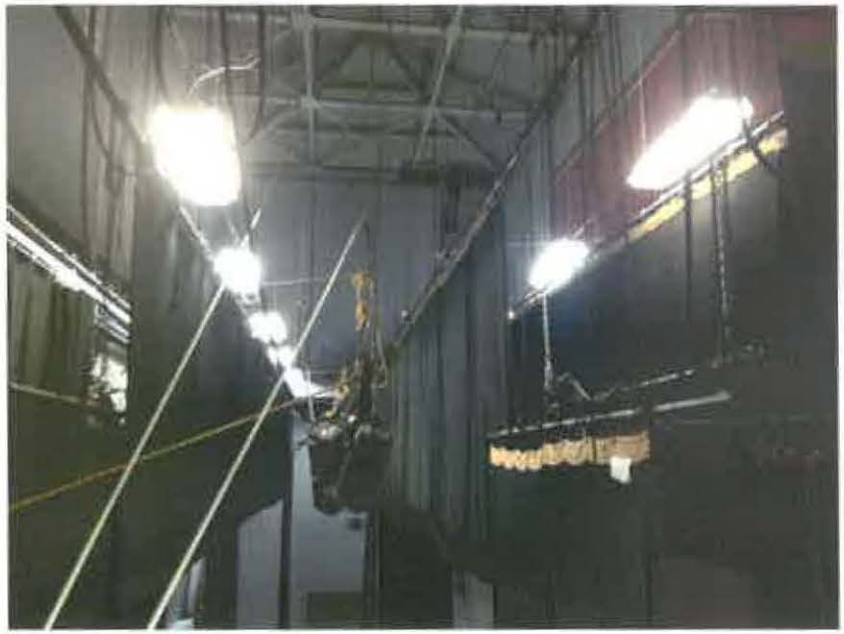
- Dimmers are failing impacting operations.
- Circuit distribution is in good condition
- Control console is aging
- Control distribution is absent
- House lighting is failing impacting operations.
- Emergency lighting does not function
- Lighting instruments are outdated.

Sound System Findings

- Modest but workable, Left / Right full range speakers
- Noted hum/digital chatter in system
- No ADA required ALS system
- Digital projector & Front projection screen
- No Surround Sound

Rigging System Findings

- 12 dead hung pipes
- Drencher fire curtain reliant on dry rotted drape
- Questionable supports on overhead pipes
- Drapery has evidence of dry rot



Other Findings

- Roof is not insulated, but ceiling is. Large holes between the two make the insulation moot.
- Unprotected penetrations through the firewall separating stage from audience.
- Dressing room electrical code violations
- Insufficient convenience outlets onstage
- No isolated power

Recommendations / Opportunities

- Replace lighting system with one based on LED technology
  - 1/8 of the power draw
  - 1/8 of the cooling load
  - No installed dimmers
  - No expendables
  - Inherently color changing
  - $420,000

Recommendations / Opportunities

- Replace House Lighting Fixtures with LED Fixtures
  - 1/5 the power draw
  - 1/5 of the cooling load
  - Greatly reduced maintenance
  - Aisle lighting
  - 3-4 year payback
  - $95,000

Recommendations / Opportunities

- Augment Sound System
  - Center Speaker for PA - $18,000
  - Subwoofers for PA - $24,000
  - Digital Mixer to kill hum - $40,000
  - Projection upgrade:
    - L, C, R , Sub for Film $35,000
    - Surround Speakers - $35,000
    - Flown Sound screen - $40,000
  - Digital Cinema $70,000
  - Digital Video Transport and control - $20,000
  - FM Based Assistive listening - $5,000

Recommendations / Opportunities

- Rigging / Drapery
  - Drapery replaced in 2013
  - Rehang 10 pipes with rated hardware $25,000
  - Winch 2 pipe with package winch system $60,000
  - Add bi part screen legs and rear drape $45,000

Recommendations / Opportunities

- Electrical
  - Replace inverter system - $25,000 (Allowance)
  - Add isolated power - $20,000 (Allowance)
  - Add convenience outlets $20,000 (Allowance)
  - Make dressing room code compliant $15,000 (Allowance)

Recommendations / Opportunities

- Other
  - Insulate roof - $20,000 (Allowance)
  - Protect fire wall penetrations $5,000 (Allowance)
  - Add wheelchair seating $40,000 (Allowance)
  - Replace Seats 460 * $425 = $195,500