

# the ASTC letter

The Newsletter of the AMERICAN SOCIETY OF THEATRE CONSULTANTS

## Windows in Theatres

Most theatre consultants have probably had this experience. A new job starts, there's a meeting with the design team, and the architect comes up with the brilliant new idea of having windows in the theatre to bring in beautiful, natural light and views. "Impossible!" you scream. "We can't have daylight streaming into the theatre when they're trying to do a show – we have to control light." You stamp your feet and continue, "What about noise and acoustics! People should be focused on the stage, not outdoors!" Well maybe it's time to look at this again. Quite a number of new performance spaces have windows and they can be quite successful.

It is usually easier to introduce windows into music rooms. Natural light and views can add to the ambience of the room and the overall experience of the performance. Studzinski Recital Hall at Bowdoin College in Brunswick, Maine utilized existing windows in a reused building shell. Acoustic sidewall reflectors screen the windows to provide diffuse light in the hall. Angled laminated glass  $\frac{3}{4}$ " thick provided the needed acoustical isolation. Reusing the building and providing light allowed to building to meet the College's standards for sustainable design.



*Studzinski Recital Hall  
(Robert Benson Photography)*

The NUMMI Theatre at Ohlone College in Fremont, California is a 220-seat studio theater. There are large windows with motorized blinds which allow natural light for classes and lectures while allowing blackout to be achieved for theatre performances when required.



*NUMMI Theatre*

*(see WINDOWS—Page 2)*

## Green Lighting State of the Art

We are closer, but we aren't there yet. All eyes are on the goal of achieving true energy savings and sustainable design in the realm of performance lighting systems. LEDs, the great light hope for the future, continue to hold the allure of a slam-dunk solution, but we still have a way to go before they meet our lofty expectations. CFLs, or compact fluorescent lights, are appearing more often in auditorium lighting, but they have an inherent technology clash with dimming control. So, what should we do as designers of performance and assembly spaces, with our minds set on sustainability and good, common-sense design? The following is a thumbnail look at our current, best options.

The first step in this discussion is to divide the problem, or the challenge, into two areas, performance lighting and auditorium and lobby lighting. Energy savings are available in both areas, but some of the perceived solutions do not yet deliver the anticipated results.

In the area of performance lighting, the best bang for the buck continues to be the industry-standard work-horse of stage lighting: the ETC Source 4 ellipsoidal reflector spotlight. This unit has made the greatest advancements in energy savings relative to light output by giving us the effect of a 1000-watt light through the use of a 575-watt lamp. We would love to see another leap in lamp and instrument technology in the future. Stay tuned for new products and for even more efficiency.

While not yet ready to knock the ellipsoidal spotlights off the front-of-house block, LED lighting can provide  
*(see GREEN—Page 3)*

## COMING SOON

The ASTC Newsletter *ONLINE VERSION*.

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(from *WINDOWS* – Page 1)

The 450-seat auditorium at The Thacher School in Ojai, California (*not pictured*) is a multipurpose room for music, speech, drama, dance and cinema. Large side windows with covers allow the use of natural light to change the character of the room appropriate for its use.

A large window in the upstage wall of the Lee Theatre at the Touhill Performing Arts Center in St. Louis, Missouri would seem to be right where you don't want it in this 200-seat studio drama theatre. However, the windows make the room much more flexible for other uses. A drape can easily be hung upstage to cover the window when needed or it can be left open and action outside can be included in the show. For lectures and social occasions the window makes the room much more attractive than standing in a black box. Flexibility allows the theatre to be used more intensively giving more bang for the buck.

“So with all these windows in theatres, why not put them at the grid iron?” you may ask. Louis Janssen of the Dutch theatre consulting firm Theateradvies is doing just that. He introduced full windows at the grid iron of the Rabozaal in Amsterdam. When you stand in the space you realize how brilliant this is. For those working long hours during the day to set up a show the light and connection to outdoors greatly improves the quality of the working environment. The theatre utilizes full power flying and the clear light at the grid enables one to easily in-



Lee Theatre—Touhill Performing Arts Center



Rabozaal Theatre



Wyly Theatre

spect the machinery. An added bonus is the terrific views of Amsterdam.

The new Wyly Theatre in Dallas, Texas, probably couldn't have more windows than if it was outside. There is full height glass around three sides of the auditorium and stage house. Individual motorized shades allow each bay of glass to be individually controlled. Acting and performance lighting can be from within and outside the room. The effect of opening the blinds during a show can change the room's apparent size and is quite impressive. By removing all the seating towers and making adjustments a flat floor can be created for banquet and other events. The Wyly is much more than a theatre, it has become a living space in the arts district of Dallas.

There are of course advantages and disadvantages to introducing windows in a theatre. The design and operation must be carefully thought out. A connection to the outdoors and natural light creates a better-quality work environment for those spending long days inside. Performances can extend beyond the outside of the room. Windows can allow the public to see what's going on inside and provoke their interest. Flexibility is greatly increased with windows allowing more intensive use of the facility.

This theatre consultant now says, “Hey, a lot of times windows are a great idea in a theatre.”

John Runia, ASTC

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## MOTORIZED VERSUS MANUAL STAGE RIGGING

A generation ago, motorized rigging was found mostly in some progressive opera houses, some municipal performing arts centers, and some well-subsidized professional theatres. Manual counterweight rigging systems prevailed. Today, we are increasingly more prone to consider motorized rigging systems for performance applications across the spectrum of performance facility types and sizes. Rather than serving almost exclusively the top end of performance venues, motorized rigging is now found routinely in elementary and secondary schools, at colleges and universities and upward through all types of facilities. Why the change?

Motorized rigging is ideally suited for situations where heavy quantities of scenery and equipment are installed, changed and moved on a regular basis, such as opera houses, touring road houses and other highly active venues. But motorized rigging is also ideally suited for middle schools, high schools, community theatres and other performance venues where safety and ease of operation are paramount. Why has it taken so long for motorized rigging to move into these more simple and fundamental realms? The simple answer is COST.

The more complex answer involves a concern that staff and stage crews responsible for the oversight and operation of

the rigging equipment are now a days in many cases less prepared and less well-trained to operate the more labor-intensive counterweight rigging systems. This, coupled with an increasingly more litigious society, points the finger toward the requirement for a simpler, while more expensive, solution for handling the traditional rigging requirements.

Therefore, the quest for a motorized rigging product that can meet the basic operational and engineering requirements at a price that is even roughly competitive with a counterweight rigging system has been attempted by some of the best

(see *RIGGING*—Page 3)

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talent in our industry. We might have reached a point of stasis where we can only refine our motorized rigging products but not significantly reduce their price. The current cost of a single motorized rigging set is approximately \$20,000 to \$25,000. This is compared to an approximate cost of \$5,500 to \$7,500 for a conventional counterweight rigging set.

The major manufacturers of motorized rigging systems include Daktronics's Vortek system; J.R. Clancy's PowerLift, Texas Scenic's In-Line Hoist, Stage Technology's BT 250 Lite, and others. Each of these products is based on the design concept of a single drum, multi-line system. Important attributes include the control and positioning system, the braking device, fixed or variable speed operation, and load monitoring. Variable speed units are designed for a maximum payload of approximately 1200 pounds. Fixed speed units are designed for up to 2000 pounds.

An individual motorized rigging unit consumes approximately 10 to 12 inches of upstage-downstage space, compared to the conventional 6-inch spacing of a manual counterweight rigging set. If a greater "density" is required for motorized rigging, sets can be installed in a staggered configuration on both sides of the stage, thereby producing a 6-inch spacing per motorized set.

Attempts have been made to quantify the amount of savings in the reduction of steel required for a motorized rigging system compared to a manual counterweight rigging system, since the motorized system does not require a loading gallery and a headblock beam. While we all wish that there would be savings in the cost of the reduced quantity of steel that would help to offset the increased cost of the motorized rigging system, it appears that these costs might be relatively negligible.

So, a conclusion that can be drawn is that a motorized rigging set will continue to cost roughly three times that of a conventional, manually-operated counterweight rigging set, but the increased cost is offset by operational efficiencies and an increase in operational safety. More and more often, these intangible advantages outweigh the increased cost.

*Robert Long, ASTC*

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significant energy savings and "green points" when used to replace wattage-intensive incandescent cyclorama lighting devices. Not only can LED cyc lights provide a near-infinite range of colors with an increasingly satisfactory punch, these units require far less electrical power, produce less heat which results in a reduction in the HVAC load, eliminate the need for replacing individual incandescent lamps and expendable color media thereby reducing the waste stream, and require less staff handling and maintenance. Recent cost analyses suggest that the increased up-front capital costs of LED cyc units can be offset immediately by savings in the HVAC design as a result of the amount of heat reduction.

LED wash lighting offers a lesser but still significant impact with many of the same benefits as described for LED cyc lighting systems. The payback period for LED wash units can be seen as from 2 to 4 years based on lamp and color media savings plus reductions in staff time.

The next area for discussion is the audience chamber and the public lobby areas. A survey of energy consumption in London theatres by Arup, the engineering company, indicates that the largest consumer of energy in performance venues is not the performance lighting system but is the result of the heating, cooling and lighting of the audience chamber and the public lobbies. Savings in these areas may have a greater impact on sustainable design than in the area of performance lighting, although we need to tackle both of these areas with equal gusto.

With this in mind, we need to re-tool our thinking about how to light auditoriums and lobbies. Incandescent down lighting will remain until we find other plausible, warm and dimmable light sources. The race is on to find new products that consume less energy and produce less wasted heat.

Compact fluorescent lights (CFL's) are popular in our homes, but they may never be acceptable as auditorium house lights. House lights need to be fully dimmable with a consistent dimming

curve. Contrary to the advice of some optimistic electric engineers and architectural lighting designers who promote the use of these units, CFLs pop on and off at around 10%, which is inherently distracting to the audience that is well-accustomed to a real, "house out". Even when used for decorative lighting in an auditorium, units with CFL lamps still do not serve as adequate replacements for other truly dimmable lamp types, regardless of what the salesman says.

LED-source down light units are becoming better and better, but their up-front cost still causes some budget shock. The resulting reduction in energy consumption by these units has still not crossed the cost-efficiency threshold, although the reduction in waste stream costs and maintenance costs are bringing them closer to a practical application. While LED downlighting is showing greater potential, the discussion becomes more complex when emergency lighting circuits are factored into the equation. Life safety codes currently do not allow DMX control of emergency lighting and DMX control is required for LED dimming.

When possible, the current best-of-both-worlds is to install a system of auditorium lighting units that provides the warm and dimmable responses that we know and love, and to provide, as well, a system of low energy cost highbay fluorescent or induction units that are used for 8 am to 7:30 pm cleaning, rehearsal, work lighting and emergency lighting. Units with HID lamps are best used in public lobbies and not in auditoriums or for performance lighting because these units are functionally inefficient when dimmed, though they can be used effectively for followspots and worklights.

While we have a way to go to reach a point of quantum change in our quest for reducing the energy consumption in our performance spaces, we are making incremental and important progress. In the meantime we need to employ every large and small method that helps to bring us closer to our goal. By the way, don't forget occupancy sensors in the dressing rooms!

*Robert Long, ASTC & Curtis Kasefang*

## ASTC MEMBERS' FORUM 2009

The annual ASTC Forum was held in September 11-13 in Portland, OR with events organized around the theme of Sustainable Theatre Design. Highlights of the event included a tour of The Gerding Theatre at the Armory building which is the first LEED Platinum theatre in the US; a facility tour and discussion of sustainable programs that have been implemented at the Portland Center for the Performing Arts, led by PCPA Operations Assistant Manager, Tom Bugas; a wine-and-cheese reception in the new LEED Platinum offices of BOORA Architects; and a panel discussion on Sustainability with panelists Alisdair McGregor of Arup, Stephen Domreis of GBD Architects, Scott Lewis of Brightworks, and Tom Pene of BOORA Architects.



Photo by Karen Sattinger

### Universal Design – Going Beyond the ADA

At the annual American Institute of Architects convention in San Francisco last Spring some of the most popular seminars dealt with the Americans with Disabilities Act (ADA) and accessible design. At one seminar it was sadly ironic that the speaker, confined to a wheelchair, could not get onto the stage of modular platforms about 24" high. There was a large portable wheelchair lift at one side but it didn't work. Two mechanics in blue uniforms with screwdrivers in hand worked over the lift for fifteen minutes and finally got it going. The wheelchair user was then able to join the other speakers on the stage and the seminar commenced.

The ADA has made the requirement for accessibility to public spaces a civil right. Various guidelines and state legislation have spelled out specific requirements. However, the architect, being responsible for the building design and ultimately responsible for ADA compliance, and the design team are still subject to lawsuits if there is perceived discrimination against people with disabilities. Designers struggle with what is equivalent, appropriate and equal access.

Studies have shown that up to twenty percent of the population through all age groups can be classified as 'disabled' or having different abilities beyond than the

norm. It is reported that the average life expectancy at beginning of the twentieth century was forty-seven years. It is now seventy-six. This increasingly-larger population of older people with decreasing physical abilities is still more mobile than in the past. Performing arts facilities work to appeal to as broad an audience as possible and accommodating the diverse needs of a wider population spectrum may mean going beyond the requirements of the ADA.

The realization of the need to design for all types of users, the expansion of civil rights, and the social benefits of including all groups in public activities such as those in the performing arts led to the concept of *universal design* several decades ago. What is universal design? It is described as "embedding choice for all people in the things we design". 'Choice' involves multiple means of use or interface and flexibility. 'People' includes not only those with mobility challenges, but everyone regardless of age, ability, sex, economic status, etc. – the widest group possible. And 'things' includes all things that humans create, manipulate, or interact with, for example buildings. Ron Mace, a universal design leader, summarized the concept when he said, "Universal Design is the design of products and environments to be useable by all people, to the greatest extent possi-

ble, without the need for adaptation or specialized design."

There are seven principles that have been identified for universal design. These are not all the criteria for good design but those for a universally usable design.

- Equitable use suggests the provision of the same identical means of use for all users whenever possible.
- Flexibility provides a choice in the methods of use to accommodate different abilities.
- Simple and intuitive use is the ability to easily understand a product's operation.
- Perceptible information gives the user the necessary information to use a product.
- Tolerance for error to minimize the hazards of use.
- Low physical effort allows use that is comfortable with the minimum of fatigue.
- Appropriate size and space for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

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# Notable Projects

That ASTC consultants are doing around the US and around the World – in no particular order...

**Robert Davis**, principal of **Davis Crossfield Associates**, **National Museum of American History**

**Van Phillips** of **Jones & Phillips Associates**, **Music City Center** in Nashville, Tennessee

**Rose Steele**, **Landry & Bogan, Inc.**, **A Noise Within**, Pasadena, California

**Heather McAvoy**, **Landry & Bogan, Inc.**, **Tri-Valley Regional Center for the Arts** in Livermore, California

**Edward Kaye**, **JK Design Group**, is consultant for **Vision Theatre** - Los Angeles, California

**Bill Conner Associates** garnered an Award of Merit from IESNA for the **Morris Arts Center** at Houston Baptist University in Texas and the WFX Charlotte Solomon Award in the category for mid-sized church designs, for **Second Presbyterian Church** of Bloomington, Illinois

**René Garza** of **Wrightson, Johnson, Haddon & Williams, Inc.**, **Lila Cockrell Theatre** in San Antonio

**J&M Lighting Design** principal **James Stockman**, **Champlain Valley Union High School**, Hinesburg, VT

**Ford's Theatre** was renovated with **Fisher Dachs Associates** of New York City says member **Joe Mobilia**.

From Atlanta, **Larry Graham** of **Graham, Swift & Co**, the restoration of the **University of Georgia Fine Arts Building**

**Len Auerbach**, **Auerbach Pollock Friedlander**, planning study for **The Esplanade, Phase 2** in Singapore

**Tom Neville**, also of **APF**, **Viva Elvis** theatre for **Cirque du Soleil** in the **MGM City Center** in Las Vegas

**APF's Steve Pollock** is consulting for the **Cabrillo College Performing Arts complex** in Aptos, CA, and principal **Steve Friedlander** is managing the consulting work for the **Signature Theatre** in NYC, and lastly, **Mike McMackin** is spearheading **APF's** work on **UC Santa Barbara's Center for Film, TV and New Media**.

**Claude Lapointe**, Principal and founder of **Trizart Alliance**, **Shenkman Arts Centre**, Ottawa

**Pierre Lemieux**, also principal of **Trizart Alliance** leads a complete technical and functional review of the **Stratford Shakespeare Festival Stage** in Stratford, Ontario

**Stephen Placido**, **TSG Design Solutions**, West Palm Beach, FL renovation/redesign at **South Florida College** in Avon Park, Florida

**Darrell Zeigler**, providing theatre consulting services at **Westlake Reed Leikosky**, **Sacramento Community Center Theatre**, Sacramento CA

**Kyle Smith**, **Theatre Consultants Collaborative**, **Regina Rosen Auditorium** and **Baby Grand Theatre**, Kingston, Ontario

**Schuler Shook** consultant-members report: **Todd Hensley** and **Joshua Grossman**, **Eastside Performing Arts Center** in Bellevue, Washington, **Bob Shook**, founder, the **David H. Koch Theatre** at **Lincoln Center** in New York, **Jim Hultquist**, renovation of **Hamer Hall**, **Melborne Arts Centre**, Australia, **Jack Hagler**, **Texas Southmost College/U of Texas-Brownsville Music Education Building**, **Robert McVay** the **National Geospatial-Intelligence Agency**, Fort Belvoir, VA, **Jody Kovalick** renovation of the **Shubert Theatre** in Minneapolis, MN. **Michael Burgoyne**, the **Kiel Opera House** in St. Louis, and **Michael DiBlasi**, the renovation of the **Saenger Theatre** in New Orleans

**Robert Smulling** of **Candela**, the **Salvation Army/Ray and Joan Kroc Community Center** in Phoenix, AZ

**Edgar Lustig** of **Lustig & Associates** reports the **Ritenour Auditorium** for Ritenour School District Overland, MO

**Don Hirsch**, **Don Hirsch Design Studio, LLC** of Vermont, a renovation of **Chandler Center for the Arts**, Randolph, VT

**R Duane Wilson**, of **George C. Izenour Associates** include **Oxen Hill High School**, Prince Georges County, MD

**Bill Allison** of **Planning Stages LLC** in Indiana, the **Long Center for the Arts**, Lafayette, IN

**Brian Arnott** and **David Jolliffe** of **Novita Techne Limited**, the **Grace Hartman Amphitheatre**, Sudbury, Ontario

*(Continued from page 4)*

By applying the goals and principles of universal design at the beginning of a project a good designer can create buildings that are more usable by all. If the ADA allows platform lifts to access a theatre it might be better to provide ramps that can be used by all for equitable use. If the ADA requires five percent of each dressing room type to be accessible it might be better to make them all accessible for more flexibility. If a small project has a building elevator, place it

strategically to do multiple duty – take musicians to the pit, audience to a balcony, and technicians to a control room. Designing circulation paths, signage, and using appropriate colors and textures that all new users can easily comprehend makes the experience better for more people.

Universal design is a philosophy that should be in the mind of the design team from the beginning of a project. Theatre Consultants with their specialized knowl-

edge of performance spaces can help to integrate this philosophy and assist the architect in making good decisions to create better performance venues. You can learn more about universal design at [www.design.ncsu.edu/cud](http://www.design.ncsu.edu/cud). A poster can be downloaded from [www.design.ncsu.edu/cud/pubs\\_p/docs/poster.pdf](http://www.design.ncsu.edu/cud/pubs_p/docs/poster.pdf). Further resources can be found by going to Google and searching “universal design”.

*John Runia, ASTC*

# The ASTC is happy to announce 2009's New Members:

## New Full Members:

**Don Hirsch**, founding director of **Don Hirsch Design Studio**, LLC, has been involved in the performing arts for more than thirty years as an administrator, educator, scenic and lighting designer, and theatre consultant. In 1988 he began Don Hirsch Design Studio, LLC in Montpelier, VT, to serve the performing arts community as a comprehensive theatre consulting firm. His work is focused on collaborative relationships with architectural firms and theatre clients in the design and development of performing arts facilities and community gathering places. Don is a frequent speaker at conferences and seminars and lectures extensively on performing arts center design, historic theatre restoration, and on the business of entertainment.

**Claude Lapointe, principal, Trizat Alliance:** In 1987, Claude Lapointe founded Trizat Alliance (Montreal/Las Vegas), dedicated to the betterment of venues of all shapes and sizes. Producing feasibility studies, conceptual design and construction supervision for every client, Trizat's reputation grew in conjunction with its client list. With a crew as talented as dedicated, Trizat went on to design, and in some cases, reinvent an impressive number of theatres, concert halls, dance studios and amphitheatres. Claude's extensive experience has reached prestigious theatres worldwide. He was project manager on notable projects such as the Theatre du Nouveau Monde, the National Theatre School of Canada's Monument-National, Le Capitole Theatre and The Minneapolis Institute of Arts Children's Theatre expansion.

**Pierre Lemieux, principal, Trizat Alliance:** Widely known as one of the top Technical Directors in the entertainment industry he has unchallenged knowledge of large-scale venue construction, electronic display design and installation, large scale touring audio, video and rigging systems design. Pierre is most recognized from his years as Technical Director with the Montreal Canadiens and the Bell Centre, specifically, his work on the design of the arena rigging and multi-configuration divider system considered one of the most technically advanced systems of its kind in the world. Re-

cently, Pierre completed the retrofit of the Showroom at the Luxor Hotel in Las Vegas for the Criss Angel / Cirque du Soleil show, the Mirage Showroom in Las Vegas, also for the Cirque, as well as all things technical for Celine Dion's outdoor show in 2008 on the Plains of Abraham in Quebec City, which attracted over 300,000 spectators.

**Peter Scheu, Scheu Consulting Services**, Chittenango, NY: Peter A. Scheu has over 30 years of varied experience in the technical theatre industry. He served as a Subject Matter Expert during the development of the first nationally recognized theatrical rigging certification program. He is an active member of the Entertainment Technology and Services Association (ESTA) and The United States Institute of Theatre Technology (USITT). Prior to opening Scheu Consulting Services in 2001, Mr. Scheu served as a Project Manager and Designer at JR Clancy, Inc., Special Events Manager at Syracuse University and the Production Manager at an IATSE Scene Shop based in Syracuse, NY. Mr. Scheu has been Technical Director and Production Stage Manager for the Indianapolis Opera, Opera Memphis, and the Syracuse Opera. In the late 1970's, Mr. Scheu worked in New York City serving as an Assistant Scenic Designer, Production Electrician, and Production Stage Manager for such venues as The New York Shakespeare Festival, The Impossible Ragtime Theatre, The Harold Clurman Theatre, La Mama ETC, and the Delacorte Theatre in Central Park. He also was the Properties Manager at the Royal Poinciana Playhouse in Palm Beach, FL.

**Robert Smulling, Candela**, Seattle, WA Robert holds a BA in Theatre from Western Illinois University (1981) and a MFA in Lighting Design and Technology from the California Institute of the Arts (1984). He worked as an apprentice electrician at the Santa Fe Opera for the 1982 summer season, and in 1985 he went to work for **George Thomas Howard Associates** until 1991. In 1992, he worked as a quotation specialist for Colortran but moved to Seattle in 1993 and accepted a position with the late Armand Marion. In 1999 he joined **Candela** to start a theatre consulting practice in that firm and he has been there for more than 10 years now.

## Associate Members accepted for Full Membership:

**Jim Hultquist** is a project consultant with **Schuler Shook**. His current primary responsibility is project manager for the renovation of The Arts Centre in Melbourne, Australia. This project includes a concert hall, opera house, playhouse, drama theatre, and experimental theatre. Jim is full-time in residence in Melbourne for the duration of the project.

**Jody Kovalick** is also with **Schuler Shook**: Jody is in the Minneapolis office of Schuler Shook where his current theatre consulting work includes the Minnesota Shubert Performing Arts & Education Center in Minneapolis, MN; The American International School, Muscat, Oman; and the University of Mary Washington – Klein Theatre and Dodd Auditorium, Fredericksburg, VA

## New Associate Members:

**Kimberly Anne Corbett, Schuler Shook** Kim is based in Schuler Shook's Dallas office, and her current projects include Dallas City Performance Hall, Dallas, TX; Lone Star College, Kingwood, Tomball & Montgomery Campuses, TX; and Lee College Performing Arts Center, Baytown, TX.

## Honorary Members:

After more than 38 years of non-stop theatre consulting, **Jack Bogan**, founding member of **Landry & Bogan, Inc.** has stepped down as a director and is retired, though still providing expert assistance as needed. He has changed his ASTC status to Honorary Member.

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