THORBURN ASSOCIATES
ACOUSTIC AND AUDIOVISUAL CONSULTANTS

eNEWSLETTER June 2004

In this issue:

==========

1. Greetings

Welcome to the June 2004 issue of our eNEWSLETTER. This past month has been very hectic, thus this newsletter is a few days late! We have had the AIA National Conference in Chicago, InfoComm conference and trade show in Atlanta, graduations and a Wedding in two weeks (Congratulations Brandon and Tionna!)

In the spirit of honoring our Country's birthday and celebrating our heritage, we decided to send on a few of our favorite recipes from Lisa and Steve's family recipe books just in time for the 4th of July celebrations. Next month we'll be back to our regular contingent of useful advise on acoustic and audiovisual issues, but in the meantime, we encourage you to take a few moments, relax, and browse these favorites - you might find something to add to your holiday feast.

As always if you have an idea, question, suggestion please drop us a note at TA@TA-Inc.com for general information or eNews@TA-Inc.com for specific comments about our eNEWSLETTER.

---

2. InfoComm 04 Wrap Up

InfoComm 04 was a success by all measures, attendance was up, and more people were trained than ever before in the history of the conference.

The sessions led by our team included: Facilities Design for Universities, June 5-7, 2004 (Three Days); Project Management, June 8, 2004 (All Day); Defining the Perfect Teaching Station for Colleges and Universities, June 9 (2 Hours); and Advanced Acoustics, June 10, 2004 (2 Hours). With standing room only, the Project Management session caught the eye of the fire inspector and the seating had to be reworked at our first break… Not a bad problem to have.

One of the highlights for us was the Consultants' Summit that began the last night of the show and continued the next day. This was the second Summit with the first held four years ago in Las Vegas. During the first Summit, the Consultant Community felt that the following were the big five things that would impact us over the next 5 years (2001 to 2006) in no particular order.

- High-Bandwidth Wireless Networks
- Flat High-Resolution Displays (digital ink / non-"glass-based," large screen imaging technologies)
- Network Appliances (printers, storage, projectors)
- Internet 2
- Interface Technology (web based control systems, control from PDA's)

The group felt that comments from 2001 were pretty much right on, with flat high resolution non-glass displays the only item lagging the five year predictions. This year we discussed the future impact of IT on the audiovisual industry and the limitations of being able to move, display, and store information at the desired speed. It was even conjectured that TV and video would no longer be broadcast by networks as we know them but over some type of on demand system over the world wide web public network -- a hybrid between cable, internet access and TIVO.

The only thing the group felt was constant is we would all still be needed, since display technology and the delivery method has and will always change, but someone still needs to know how to design the room so people can see and hear. So until next year, as Yogi Berra stated: "The future just ain't what it used to be."

---

3. Widescreen: The New Standard?

The other "big thing" at InfoComm 2004 is projector manufacturers are finally delivering "widescreen projection" by actually shipping native resolution widescreen digital projectors. For the past 6 years, the projection industry has moved from analog projectors to digital projectors (the difference between your old TV and the computer screen you are reading this eNewsletter on). Digital displays, driven by computers, use pixels as the smallest addressable display element. With the exception of workstation resolutions, computers and TVs have a display ratio of 4 units wide by 3 units tall; workstations have a ratio of 5 by 4. This gave us an SVGA ratio of 800 pixels wide by 600 pixels high, an XGA ratio of 1024 by 768, etc.

This all changed when HDTV ratio finally made it to the market. HDTV aspect ratio is 16 units wide by 9 units high. So what should the pixel ratio be? As you might expect, no one can agree. VESA (Video Electronics Standards Association) is still developing a standard. In the meantime we see projector manufacturers with the following pixel counts and ratios:

2080w by 1080h (16:8.43)
1920w by 1080h (16:9)
1366w by 768h (16:9)
1280w by 720h (16:9)
1024w by 576h (16:9)
964w by 544h (16:9)

Different resolutions arise from how manufacturers define "widescreen." Which, in turn, is driven by the need to display Digital HDTV broadcasts and its inherent compromise due to the two different horizontal refresh rates. The two most common methods are 720p (scanning each line in progression) and 1080i (scanning every other line or interlaced). Computer manufacturers selling laptops with a whole other set of aspect ratios and resolutions further muck up the issue:

1024w by 768h (4:3) or (16:12)
1280w by 1024h (5:4) or (16:12.8)
1280w by 800h (16:10)
1440w by 900h (16:10)
1920w by 1200h (16:10)

By adding computer resolutions to the mix it is no wonder there are a wide range (pardon the pun) of solutions. And they keep changing -- by the time you read this all of this may just be out of date! So how do projector manufacturers compensate for this apparent lack of coordination? Many up-convert or down-convert the signal to match the resolution of their projector. Christie Digital, for example, uses Digital Interpolation Technology (DIT) to manipulate HDTV signals from 720p to 768 (WXGA).

Since the FCC's mandate for digital television has moved forward and stimulated interest in widescreen formats, many audiovisual systems are being designed and installed with widescreen display systems. Using a standard definition (4 by 3) projector on a widescreen results in black "pillars" on each side of the image. When widescreen material is presented on standard definition screens, black bars are located above and below the image. The problem arises when widescreen material is displayed on a standard 4 by 3 screen -with black bars at the top and bottom, the image is too "small" for the furthest viewer in the room. (Please see our January 2004 eNewsletter, "Presenting the Perfect Picture", for more information.)

With new widescreen format projectors emerging, conventional wisdom has been that black bars and pillars would be a thing of the past. But different computer resolutions are making that virtually impossible. With all of these options, there may never be a widescreen standard. Manufacturers have been making progressive scan DVD players that can output 720p and are starting to produce DVD players that have an internal up-converter resulting in a 1080i

output. If laptop manufacturers were to start producing laptops with a 1920 x 1080 resolution, we might obtain uniformity between the industries.

---

4. Just in time for the 4th of July

It seems that summer here in the States really does not get going until the 4th of July. As many of you know, our founders Steve and Lisa have a strong background in the Girl and Boy Scouts. Both worked on summer camp staff, led outings and had to learn to cook to help feed all of the mouths at camp. So kick back and enjoy - maybe one of these will make it into your cookbook. These and others (with photos) will be posted on our web site under fun stuff in a few weeks http://www.ta-inc.com/funstuff.htm.

Steve's Baked Beans

2 pounds beans (any type you like – Navy, Pinto, White)
1 large yellow onion, chopped
1 pound slightly cooked bacon, chopped *
1 small jar molasses
2 tablespoons dry mustard
4 teaspoons salt
1 teaspoon pepper

Soak the beans in water overnight. Then cook beans in water: Simmer for 10 minutes, drain and rinse. Repeat two more times. We have been told that this "de toots the beans – this is a form of noise control". In a 6-quart crock-pot gently mix all of the ingredients in the pot. Cover and cook on high for an hour or so. Remove cover and mix, add water as required. We have had these as soon as three hours after they have gone into the crock pot, and have let them cook overnight (on low) and had them the following day. The mustard and molasses is the key to the success of this dish. * We have used pork country ribs that were browned and drained

Mom T's -- Potato Salad

8 boiled potatoes, cold and diced
6 hard-boiled eggs, cold and diced
1 onion diced --- the smaller the better
lots of Mayonnaise (We have tried all kinds and this only works with Miracle Whip)

The tricks are lots of eggs and enough Mayo to make it moist. 2 parts egg to 3 parts potatoes. Mix and refrigerate overnight. This is one of the dishes that taste better the second and third day, so if you make a lot it does keep well in the refrigerator!

Mom L's Three Bean Salad

1 can each green beans–drained, yellow wax beans–drained, red kidney beans-drained
½ cup chopped green pepper
2 tablespoons finely chopped onion
¼ cup sugar
2/3 cup white wine vinegar
1/3 cup olive oil
1 teaspoon salt
1/2 teaspoon black pepper

Combine beans in large bowl. Combine remaining ingredients in quart jar (something with a lid) cover and shake, mix thoroughly. Pour over beans and mix gently. Chill overnight. (Serves 8).

Steve's Chicken Marinade

Blend:
1/3 cup lemon juice
1 teaspoon sugar
½ teaspoon salt
½ teaspoon celery salt

1 tablespoon dry mustard
½ teaspoon cayenne pepper
1 clove garlic – minced

Wisk in 1/3-cup vegetable oil

Pour over chicken pieces in glass baking dish. Marinate 3 hours turning occasionally. Drain and then bake, broil, or grill as desired. If you add in one cup of white wine vinegar to the mixture above it makes a great basting mixture for grilled chicken. We have also used this with lamb and pork steaks.

Lisa's Fruit Crunch
1 cup uncooked rolled oats
½ cup four
1 cup brown sugar
½ cup melted butter
1 teaspoon cinnamon
lots Seasonal Fruit

This tasty dessert can be used with peaches, rhubarb, cherries or whatever fruit or combination you have available. Heat oven to 400 degrees. Combine rolled oats, flour, sugar and cinnamon. Add melted butter and mix well. Sprinkle ¼ of the mixture on the bottom of 9-inch pie plate or similar size baking dish. Arrange fruit slices on top of mixture. Sprinkle remaining ¾ of mixture on top of fruit. Bake 25 to 30 minutes. Top with ice cream and enjoy. If you are using rhubarb adjust the mixture to ½ on the top and ½ on the bottom.

Red White Blue -- No Bake Cheesecake – Very Patriotic and Tasty Too!
2 8 oz cream cheese, softened (we use Kraft Philadelphia)
1/3 cup sugar
2 tablespoon lemon juice
1 8 oz tub whipped topping, thawed and divided. (We use Cool Whip)
1 graham cracker crust
Strawberry Halves and Blueberries

Beat cream cheese, sugar and lemon juice in large bowl, until well blended. Gently stir or fold in 2 cups of the whipped topping. Spoon mixture into the crust. Refrigerate 3 hours or so or until mixture has set up. Spread remaining Cool Whip over the top of the pie. Arrange berries in rows to resemble the Flag. (i.e. line up the blueberries in rows in the top left corner to simulate the blue field of the flag and filling the remaining area of the pie top with strawberry halves to make the red and white stripes of the flag.

---

5. Way to Go Team – Cesar E. Chavez Education Center Wins!

And the "Savings By Design Energy Efficiency Integration Award" goes to:
Cesar E. Chavez Education Center, Oakland, California
Architect: VBN Architects
Electrical Engineering: Pete O. Lapid & Associates, Inc.
Mechanical Engineering: Raymond Brooks Engineers, Inc.
Acoustical Engineering: Thorburn Associates Inc.
Owner: Oakland Unified School District

In Oakland's densely populated Fruitvale/San Antonio area, the design of the Cesar E. Chavez Education Center responds to Oakland Unified School District's mission to raise student academic performance and provide equal opportunities for all children to succeed. The core of the 672-student public elementary school is 25 classrooms, each with outdoor learning patios or shared decks, conceived in two-story, fully day lit wings to form two "small schools." The facility's program supports small class sizes of 20 for K-3 and team teaching. The project encompasses 95,647 square feet on a 7.85-acre site. It was certified by the Collaborative for High Performance Schools (CHPS) program with a score of 36 points for high-performance design, including 10 points for environmental quality, 11 for energy efficiency, and 10 for site design. It exceeds Title 24 margins by 25 to 30 percent.

The entire site layout and specific academic areas maximize natural day lighting through a combination of controlled south facing glazing with sunscreens, diffuse north-facing glazing and translucent sandwich panel skylights. Maximum natural ventilation, passive heating and cooling (with air conditioning only in the multipurpose room and library) and a well-integrated efficient lighting and control system help achieve the energy analysis of 30 percent energy savings over minimum state standards.

Acoustically, Cesar Chavez faced steep challenges, with Bay Area Rapid Transit (BART) tracks less than 400 feet from the nearest classroom on one side and the very busy International Boulevard flanking the school on the other side. To reduce sound from the outside sources, the classrooms are located as far from the BART tracks as possible. The school's windows are also more acoustically insulating – laminated and with a larger air space than is typical. And, designers used additional layers of gypsum board on the walls and ceiling to provide a higher level of noise attenuation.

The jurors were impressed by the efforts made to bring the best of energy-efficient, sustainable design to a tough, constrained urban site. "This really is an oasis," the jurors exclaimed. "It makes a compelling argument for dealing with cultures and context and it embodies the success of the Collaborative for High Performance Schools program. If schools should be centers of the community, this project supplies an outstanding example." The other two projects selected for the 2004 Savings by Design award are: Challengers Tennis Club for Boys and Girls - Los Angeles, California and Lake View Terrace Branch Library - Los Angeles, California. More information on CHPS and Savings By Design can be found at: http://www.chps.net and http://www.savingsbydesign.com.

---

6. Laminated Glass on Steroids

Sekisui, a Japanese firm, has come up with a new way to improve the acoustical performance of laminated glass which is often used to reduce noise transfer from space to space when vision is desired. The inner layer of the lamination or the PVB (Polyvinyl Butyral) layer was found as a location to improve the acoustical performance of the glass. Sekisui has developed a patented 3 layer construction that allows the "softer core to absorb incoming vibrations, while outer layers provide traditional PVB strengths".

So for those of us who flunked Chemistry 101 - we bond two pieces of glass together by a sandwich of vinyl. The outer two layers of the vinyl sandwich are a little stiffer and provide strength against items trying to fly through the window and the middle layer is soft so any vibration that does hit the outside of the window is reduced as it travels through the glazing system. Higher frequency noise, such as wind, is reduced another 5 to 10 decibels, a very noticeable change. The product is used at Heathrow Airport and the British Reading Room in London. We would expect to see this product in hotel or residential windows in noisy urban areas or in more critical spaces that are concerned with higher frequency noise. Below the middle of our speech range the new system does not perform any better than current laminated glass or standard glass. Again it is one more tool for the toolbox.

==========

STAY SUBSCRIBED & TELL A COLLEAGUE

If you change your e-mail address, remember to re-subscribe at http://www.ta-inc.com/enewsletter.htm. Please pass this on to friends and colleagues. If you are getting this second hand and want your own copy http://www.ta-inc.com/enewsletter.htm.

Feel free to quote any part of this newsletter, just give us credit and let us know how and where the quote will be used.

THANK YOU FOR READING OUR eNEWSLETTER

Our eNewsletter is published on an occasional basis, about once every month. We are always looking for new topics and ideas, please drop us a note at eNews@TA-Inc.com with any comments or suggestions.