

THORBURN ASSOCIATES INC.
Acoustic and Technology Consultants
Designing Quality Environments
eNewsletter

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Happy Holidays!

"Perhaps the best Yuletide decoration is being wreathed in smiles." ~Author Unknown

Make some happy memories this joyful season: give of yourself, take time to savor, taste something new, follow a tradition, add a little spice, throw a snowball, give an unexpected gift, reflect on the past then turn to the promise of the blank page of the future. If you can't be with the ones you love this holiday season, keep them close in your hearts. We wish you and yours safe travels and Happy Holidays!

Julia Nguyen, our Marketing Coordinator recently got married—Congratulations, Julia!

A former Thorburn Associates employee, Avi Bortnick has recorded his CD entitled, Clean Slate. His music is a blend of jazz, blues and rock and roll. Avi's website is:
<http://www.avibortnick.com/>

As always, it is our goal to make sure that Thorburn Associates is your single point of contact for all your Acoustical and Technology Design services. If you have an idea, question or suggestion, please drop us a note at TA@TA-Inc.com.

The Low-Down on Noise Cancellation Headphones

In a recent meeting, the gauntlet was tossed to us. I want to get a set of noise canceling headphones for Christmas, what should I ask Santa for? As a leader in helping make things quiet we eagerly took up this challenge.

Noise canceling headphones are not new. Steve Thorburn started traveling with a pair of Sony MDR-NC-20 headphones almost six years ago. He felt they were the best option at the time. They worked very well, had an on/off switch, so the headphones could be used for standard listening and were cost effective at approximately \$250 (about 1/2 of the price of the Bose product).

Some general things that you should be aware of if you are looking for noise canceling headphones: The technology is based on active noise control - the headphones work by using a microphone that listens to the surrounding noise. A circuit inside the mechanism creates a sound wave that is equal and opposite in every way (volume and phase) to the unwanted source sound. When the two sounds meet, the unwanted source sound is cancelled out resulting in a significant reduction of perceived noise. This technology was first developed to control mechanical noise in large ducts and exhaust stacks. Bose took this concept and began developing headsets for the military, allowing pilots and others using the



headphones for hearing protection to better communicate with each other. This early research is what gives Bose the lead in developing consumer headset products.

If you are getting the headphones to reduce the cranky baby or yakking Andy next to you on an airplane, you will be disappointed. The computer that is in the headsets is not quick enough to guess what the next sound will be from the baby or your seatmate, so that sound will only be reduced by the actual ear muff system. If you want to cut out what we call transient or sporadic sounds then look for a head seat with a full earmuff or one that fully covers the ear. Remember, the technology was developed to reduce the constant background noise associated with mechanical systems, engine noise or wind noise on the exterior of the vehicle.

Like a recent review at SeatGuru.com, we also got our hands on a number of different noise canceling headphones. Here is what we found.

Headphone	Noise Canceling	Comfort	Cost	By Quality	By Cost
Panasonic RP-HC300	**	*****	\$199	6	5
Panasonic RP-HC100	**	****	\$45		
Sony MDR NC50	*** 1/2	*****	\$199	3	3
Sony MDR-NC-6	*	***	\$50		
AKG K 28 NC	****	** 1/2	\$160	5	2
Logitech	* 1/2	*	\$139		
Bose QC2	*****	*****	\$299	1	4
Bose QC3	****	****	\$349	4	6
Sennheiser PXC 300	****	*****	\$199	2	1

When we compared the common results between our research and SeatGuru.com results, the quality ratings were consistent. So, if you are asking Santa for headsets, the Bose QC2 would be the way to go, but if the money is coming out of your pocket try the Sennheiser PXC300-- and if you are happy with the feel and performance, then stop there!

Our rating is based on a weighting of noise cancellation 60 percent and comfort 40 percent. The pricing is current from the Internet as of November 25, 2006. All names, trademarks, etc., including the rest of the fine print legal stuff is assumed.

You can find out more about the reviewed headsets at <http://www.TA-Inc.com/NCH.htm>

In the Zone

You may not know that Thorburn Associates also designs presentation lighting. Lighting is essential to the success of a facility. Lighting, like sound, creates its own ambience and either blends harmoniously while providing needed support or literally stands out like a glaring beacon, distracting from the intended mood as well as interfering with presentations and lectures.

The human eye accepts and merges together different types of lighting sources: incandescent, florescent and daylight; however, video cameras require special treatment to accurately render color.

All lighting fixtures in presentation spaces should be zone controlled to provide low ambient light levels on the projection screen when the screens are in use. Indirect lighting should be



used wherever possible. Night-light or emergency lighting should be located in the back of the room to keep interference with the projected image as little as possible.

Lighting design includes the considerations of: quality of light, quantity, maximum contrast, fixture location, reflection and controls. Lighting design also includes the use of black out shades, either manual or motorized.

Lighting controls compliment activities while minimizing glare. In the case of a presenter, lighting should minimize shadows, showcasing the person and lectern while allowing anything on the screen to also be seen.

Lighting is basic to any project; how a space is lit is anything but basic.

TA Project Highlight: Mountain View Senior Center

Thorburn Associates was hired to design the technology infrastructure, that is, locations for all the loudspeakers, projection screens, future locations for equipment racks, conduits and power requirements during the design phase of the Mountain View Senior Center. The one-story new construction building near San Jose, California, in the city of Mountain View, offers diverse programs and social services to those 55 years and over.

The spaces include:

- a social hall with attached kitchen
- an exercise room
- a multi-purpose room equipped with surround sound for "movie nights"
- a computer teaching lab including a projection large screen to facilitate student learning
- an arts and crafts room
- a game room stocked with billiards tables, TV's, tables for board games
- small meeting rooms
- a large multi-purpose room equipped with projection and sound systems for lectures, presentations and events

A paging and background music system runs through out the building.

The intent was that the audiovisual systems would be installed as a design/build by an A/V contractor but the City of Mountain View, seeing that TA knew the facility and had worked with the Senior Center users, realized they would be best served if TA designed the full audiovisual systems. The result is better communication and a successful project.

The facility is designed with technology in use in our everyday lives to continue to facilitate and enrich senior's lives at the highest level. From calligraphy to yoga classes, on-site health services and a community garden, Mountain View Senior Center offers challenges and social opportunities.



Where am I?

Or how fast am I going? Or how do I get there from here? GPS, or Global Positioning System, isn't just for finding the way from the airport to your hotel via the nearest Starbucks anymore.

GPS is a satellite navigation system funded and controlled by the U.S. Department of Defense. The signals from the 24 satellites orbiting Earth at 12,000 miles above us are used to compute position, velocity and time. GPS receivers are used on land sea and air, for map-making, land surveying, gauging altitude and speed with great accuracy. The satellites send radio signals to receivers in any weather, 24 hours a day. The satellites are placed so that at least 4 will be above the horizon and any given time. Three satellites are required to triangulate longitude and latitude, a fourth will figure out altitude as well.

GPS receivers are installed in cars, are hand-held devices used by mountain climbers, hikers, bicycle enthusiasts, marathon runners, glider pilots even pets. GPS receivers are often available with PDA's, cell phones, watches and car computers.

GPS can be used by emergency services to find cell phones. Assisted GPS technology is used by cell phones because it reduces the power requirements and increases accuracy.

Some GPS units have maps, built in compasses and voice navigation. Purchasing a GPS unit is largely determined by what you'll be using the unit for. Units start at about \$100 and go up from there. Battery life, memory, screen size, whether or not its waterproof—these are just some of the criteria.

Geocaching is a popular game using hand-held GPS units to travel to a specific site and search for objects hidden by other gamers. A cache includes a logbook to record visitor's notes and often other items. A treasure hunt!

The type of GPS you purchase should be based on its use. With so many ways to integrate GPS in your life, you can start plotting your next adventure with ease and with the confidence that you'll always know where you are.

Some websites to help you decide:

<http://garmin.com/>

<http://www.magellangps.com/>

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15 Years of Designing Quality Environments

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