

**THORBURN ASSOCIATES INC.**  
**Acoustic and Technology Consultants**  
*15 Years of Designing Quality Environments*  
**eNewsletter**

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**February 2007**

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In this issue:

- What's New With Thorburn Associates
  - Focus on Acoustics: Home Theater Equation
  - Focus on Technology: Sound Myth-Understandings
  - Project Highlight: San Jose Cambrian Branch Library
  - Product Perusal: Zigbee
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**Greetings!**

We bid January adieu and charge into February, pausing, of course, to acknowledge President's Day and celebrate Valentine's Day. Just a few ideas for those trying to shy away from the traditional chocolates and flowers:

- Bonsai trees have a sense of permanence to them, yet still need nurturing.
- A trip to the art museum re-ignites that sense of wonder.
- A hike invites simplicity while returning to nature.
- Any kind of water—the ocean, lake, pond, reservoir, river, swimming pool—its all romantic with the setting sun and proper libations.
- Live piano either at dinner or for after-dinner drinks and dessert. Speaking of which, go to two or three places—a different place for drinks and appetizers, dinner somewhere else and dessert at yet another place. Add a dance in the moonlight and you're golden.

Regardless of where and with whom you spend Cupid's holiday, take some time for yourself, renew your own spirit and seek the enjoyment of life's simpler pleasures.

One of TA's pleasures is attending and exhibiting at industry conferences around the country. If you're in town, come on over and say hello.

Feb. 8-9 International Builders Show in Orlando, Florida  
Feb. 22-24 AIA Spring Conference in Isle of Palms, South Carolina  
March 2-3 Themed Entertainment Association (TEA) Summit in Burbank, California  
March 8 Global Shop in Las Vegas for Digital Signage Day  
March 13-17 National Systems Contractors Association (NSCA) in Orlando

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](mailto:TA@TA-Inc.com).

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**Home Theater Equation**

Bigger is not always better, or at least that's the case with televisions, plasma and LCD projection screens. This week, more big-screen TV's are sold due to Super Bowl-mania than any other time of year.

Some considerations:



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- How big is the room?
- Where will you normally be sitting?
- How far away from the screen is that?

If you sit closer to the screen you want a higher resolution display. Further away, you can have a lesser quality, more inexpensive screen. You don't want the image to overwhelm you. Too close and you can see the pixels refreshing.

Some guidelines for wide-screen (HDTV) displays:

Size of Screen (Diagonal)	Distance from Screen
20 inch	5 feet
40 inch	10 feet
50 inch	12.5 feet
64 inch	15.5 feet
80 inch	20 feet

The home theater equation requires much the same considerations as office videoconferencing. The screen should be in a place that doesn't get a lot of glare from outside. A windowless room or windows with black-out shades is desirable.

Neutral colored walls behind where people sit helps keep distractions low. Carpeting is better than wood or hard surfaced flooring for better acoustics.

Whether creating a home theater or a videoconferencing center, an audiovisual consultant can be of great help in determining equipment needs. Enjoy the game!

### Sound Myth-Understandings

A myth is a story handed down through history, often orally, that explains the unknown. In some cases, we have heard these myths so often we never question their veracity. The word itself comes from the Greek, "mythos" which meant speech but later came to mean legend.

In the spirit of Mythbusters, we've found some sound and acoustical legends to address. So, if you know the realities behind these fables, good for you—if not, remember, not everyone's perception of the truth should be your own. Question authority.

- If you plant a row of trees does it block sound? Trees block sight, not sound. There are many gaps between trees and shrubs that allow sound through, so a wall or berm is a better choice. Of course you can always plant trees, shrubs or vines along the wall to disguise it.
- Can singing really break glass? Yes, but it takes perfect pitch and patience if the singer is not amplified. Each glass has its own frequency and a singer has to hit that note and sustain it long enough for the glass to vibrate itself to pieces.
- Can you hear the ocean in a shell? Only if you have a tiny tape player and a recording of some waves. It is not your own blood supply rushing through your ears, either. The sound you hear when you place a shell near your ear is actually ambient



noise being reflected back to you. In a sound proof room, there is no sound from the shell.

- Can a car break the sound barrier? Yes, and one has. The sound barrier is the speed that sound travels, which varies with weather and altitude, but is basically 770 miles per hour. Chuck Yeager was the first person to break the sound barrier on October 14, 1947, flying the Bell X-1. On October 15, 1997, in ThrustSSC--a jet-powered car--Andy Green became the first person to break the sound barrier in a land vehicle.

Of course, one of the biggest myths is that it must cost much more to have an acoustical or audiovisual consultant on your design team. A consultant has years of training, experience and the means to precisely measure noise. Complicated audiovisual systems often interface with computers and other equipment to work properly. Achieving the acoustical and audio needs of the space in a cost effective manner is the goal. We'll have more myth-understandings in the next newsletter. If you have any yourself, please share with us at: [enewsletter@TA-Inc.com](mailto:enewsletter@TA-Inc.com).

### **TA Project Highlight: San Jose Cambrian Branch Library**

Libraries now days are competing with large bookstores and the Cambrian Branch has the means to be a contender. San Jose's new library, designed by Anderson Brulé Architects, opened in November. The LEED certified building is 28,000 sq. ft. and includes an informal communal area with a cozy fireplace; group areas for meetings; technical center; Internet café; study spaces; a story-telling venue; and community space.

The two-story building incorporates more seating and computers than the previous library. Free WiFi coupled with big comfy chairs make for an inviting atmosphere. Artists Andrea Myklebust and Stanton Sears created a magnificent piece that runs the length of the stairway. The stainless steel panels woven with steel wire represent the local agricultural history.

TA's acoustical involvement started in the design phase to promote natural acoustics with room finishes, while enhancing speech intelligibility in the meeting rooms and counter areas.

The audiovisual component of TA's design includes a paging and background system through out the building. The children's area and teen's room are equipped with individual CD players and tuners for appropriate music choices for those groups. The Community Room & Technical Center includes:

- permanent ceiling-mounted data projector for front screen projection
- retractable screen
- DVD/VHS combination player
- In-wall loudspeakers for program audio
- ceiling-mounted loudspeakers
- cut-off switch to over-ride paging system during events
- hearing assistance system for ADA compliance
- flat-panel monitor recessed within the teaching station
- moveable lectern with built-in computer/video interface and microphone
- controls for sound, projector, screen, room lighting and audiovisual system power

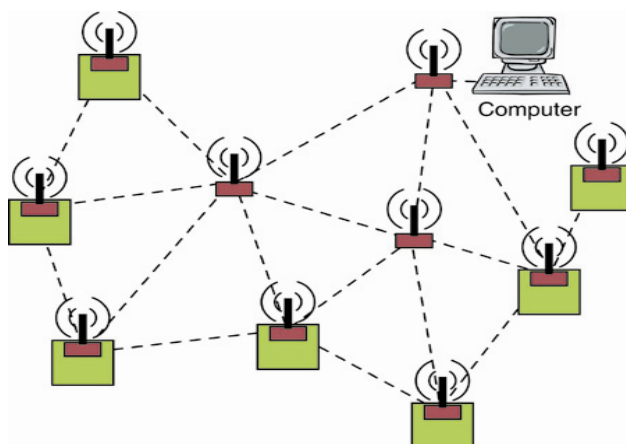


Libraries have always been a community gathering place, a source for information as well as inspiration. Cambrian Branch Library invites, preserves a history embodied in its art and in its tradition and successfully competes against upscale bookstores. To see pictures--  
<http://www.TA-Inc.com/pr-pics.htm>.

### Product Perusal: Zigbee

Zigbee is a low power consumption WiPAN (Wireless Personal Area Network). Zigbee is a protocol, similar to Bluetooth technology, which runs the WiPAN for low data rates. It is geared toward remote controlled technology to extend battery life. For example, the remote control at a podium or teaching station can use Zigbee to signal the drapes to draw down; dim the lights; send the projection screen down—all wirelessly. Other uses for Zigbee include intruder alarms, embedded sensing and automation in both home and industry. By its low power consumption it is meant to be a less expensive alternative to wired and wireless protocol.

Zigbee is self-organizing, meaning it works on a mesh-based network rather than the star or token ring. Zigbee can re-route itself if a network pathway is busy or blocked.



A wireless mesh network (from <http://www.sensormag.com>)

The advantage of Zigbee is clear in a retrofitting instance where installing new wiring would be costly and less time efficient. Control System companies such as AMX have created Zigbee enabled devices for building automation control and have plans for many future devices.

Zigbee has its limitations with low bandwidth communication and may not be the answer to all control requirements; however, low power consumption and self-healing connectivity make it a viable option for a wide range of applications. Check out <http://zigbee.org> for more info.

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