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

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Greetings!

Welcome to the October 2007 issue of our eNEWSLETTER. The past few months have been very hectic with training new employees, teaching at industry events and completing work on the recently opened Kaiser Santa Clara Medical Center (See details below.)

We would like to congratulate Jim Horn with his recent promotion to Associate Principal. We're pleased to have him as part of our team. Follow this link for the complete story: <http://www.ta-inc.com/pressrelease.htm>.

We are attending the following industry events. Be sure to stop by and say hi. If we don't see you, give us a call—we'd love to catch up!

[TEA SATE](#) Oct. 9-10 in Orlando, FL
[AIA California Council](#) Oct. 19-20 in Pacific Grove, CA
[Worship Facilities Expo](#) Oct. 24-26 in Atlanta, GA
[DBIA](#) Oct. 31-Nov. 2 in Dallas, TX
[AIA VA](#) Nov. 7-9 in Richmond, VA
[IAAPA](#) Nov. 12-16 in Orlando, FL

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 eNews@TA-Inc.com

Helipad Solutions

Corporations, television stations, police and firefighters use helipads, even high-end residential estates. The noise from the helicopters as they approach, land, and take off can be extremely disruptive to anyone within earshot. At Thorburn Associates our Engineers can provide the acoustical solution. We start by working with the architect, the end-user and the helipad planner to determine the usage, helicopter models and available flight profiles.

We model the helipad with different pad locations and flight path profiles in respect to nearby noise-sensitive receptors. The modeling results help determine the best combination of the variables to produce the least noise at the receptors.

Having just completed work on the new Kaiser Permanente Santa Clara Hospital campus, we'll use that facility as an example. As Kaiser Santa Clara is not a trauma center, the helipad will be used for

emergency transport of patients to Stanford Medical Center for specialist procedures. The anticipated usage is 1-2 transports per month. Due to the existing rooftop mechanical equipment, the helipad could not be located on the roof, but is on an elevated platform, adjacent to the hospital and in close proximity to the residential neighborhood.

Thorburn Associates worked closely with the Kaiser Facility project architect, Anshen + Allen (<http://www.anshen.com/>) to evaluate the noise impact of the proposed helipad on the adjacent residential neighborhood and the hospital itself.

To perform our evaluation, we used the HNM 2.2 (Helicopter Noise Modeler) software, which is currently recognized by the federal government as the official modeling software for heliports/helipads. For our evaluation, we modeled two anticipated flight paths using two different helicopter models commonly used for local EMS operations. To reduce impact on the adjacent residential neighborhood, the arrival and departure paths are in an east to west orientation. This allows the helicopter to fly along the Lawrence Expressway, the primary noise source in the area, for most of the flight path prior to final descent and take off.

Our evaluation indicates that the helipad will not pose a significant impact on the residential neighborhood, with the given helicopter models and flight paths; however, the helipad will impact the hospital itself. This was addressed by using windows with higher acoustical performance.

Using modeling software, we were able to meet the city of Santa Clara and Kaiser Permanente's needs of a noise impact evaluation for their new helipad, assisting them in their attempt to be a "good neighbor" to the adjacent residential area.

High Definition Videoconferencing Provides Effective Real Communication

High Definition (HD) video communications are redefining what people expect from videoconferencing. With higher definition quality, the image is much clearer—enabling meetings to be natural and productive. The image resolution is over nine times better than traditional videoconferencing. To help understand the differences between standard and HD videoconferencing we need to discuss resolution, frame rates, display systems, audio quality, and camera designs.

Traditional videoconferencing has a resolution of 352 pixels wide x 288 pixels high (1/9th of a typical computer display). This is known as "Common Intermediate Format" (CIF). HD offers resolutions at 1280x720 or 1920x1080. This allows for the use of a 16:9 high-definition display to provide a more natural image. HD videoconferencing uses a frame rate of 30 frames per second (fps). Standard videoconferencing can have a frame rate of 15 fps and lower. Higher frame rates mean better motion handling and higher overall picture quality. No more jerky movements!

The display system is a crucial element of the overall videoconferencing system—larger, 16 x 9 wide screens give the viewer the sense of "being there." Combining a high quality display with HD videoconferencing allows users to experience the nuances of expression and gestures that could not be seen with standard videoconferencing.

To support this improved image, bandwidth (or network data rate) ranging from 1 megabit per second (Mbps) to 4 Mbps is required for HD videoconferencing. (That's 3 T1 lines!) Traditional videoconferencing requires bandwidth of 384Kbps (That is good quality DSL.)

Audio quality is an often-overlooked element of a successful videoconference. HD video will be of reduced benefit without high quality audio to go along with it. Natural flow of conversation is key to a quality videoconference.

To send HD video over the videoconference CODEC (the hardware/software solution that CODEs the information at one end of the videoconference then DECODEs it at the other) users must also invest in a HD camera. HD cameras provide greater flexibility. This translates to a clearer picture and an overall wider view of the conference room.

The benefits of videoconferencing are numerous. Tasks such as project meetings, client contact, and even training seminars that would normally require expensive air travel for large corporations are easily and effectively completed by videoconferencing. Effective long distance decision-making has never been

easier. Professionals are no longer required to spend their lives on airplanes, which can boost employee loyalty and morale.

HD videoconferencing is used beyond the corporate environment. The education, government and healthcare environments also benefit from the HD experience. Educational institutions use HD videoconferencing technology to connect between multiple educational sites. Teachers and students benefit from full interaction between classmates, teachers and knowledge experts.

The healthcare industry uses HD videoconferencing systems to allow medical professionals to service patients remotely, obtain continuing medical education, and run the day-to-day business of hospitals without loss of quality or care. With HD systems, physicians and other caregivers are able to see detailed symptoms clearly and can assist with a diagnosis from thousands of miles away.

The increased requirements of HD videoconferencing are justified by these benefits, which low bandwidth videoconferencing simply does not offer. However, costs of \$25K and up for CODECs; \$10K for HD cameras and the increased network costs can easily dissuade an HD purchase. Still, the overwhelming return on investment cannot be ignored and as HD videoconferencing prices drop and technology advances, the opportunity for these systems to be implemented will continue to grow.

Project Highlight: Kaiser Santa Clara Medical Center

The new Kaiser Permanente Hospital and Medical Offices in Santa Clara, CA recently opened on a 52-acre campus. The facility is equipped with leading edge technology yet designed with a warm, inviting environment. The hospital campus is home for a weekly Farmer's Market, classes in healthcare, beautiful gardens and play areas for children.

The facility consists of over 300 beds, 21 operating rooms, a Pediatric Center, 5 pharmacies and 2 lobbies. A connecting sky bridge joins the medical office building with the hospital. Two parking structures flank the buildings and a helipad is located near the hospital, near ground level.

TA's strategies for the acoustical design addressed: speech privacy as required by the Health Insurance Portability and Accountability Act of 1996 (HIPAA); parking garage noise; sound isolation; mechanical noise and vibration control for the central plant; noise abatement for the cooling towers and noise from the helipad.

The hospital's main focus was to diminish the overall noise impact of hospital activities on the surrounding neighborhood—a challenge for the previously unassuming cherry orchard morphed into a state-of-the-art hospital.

To enhance the acoustical environment between birthing suites, examination and hospital rooms, TA looked at sound isolation details including materials used to construct the walls and penetrations through the walls such as ventilation and heating/cooling details. This helps to insure patient privacy during exams to meet HIPAA requirements.

To lessen the impact of noise from the parking structure, several recommendations were implemented: texturing the floor surface to reduce tire "squeal" noise; moving the staff parking area to below grade; relocating the garage entrance and exits to limit the impact of traffic noise and enclosing the structure to help reduce noise from car doors closing, lock beeps and horns.

A facility's cooling towers can have a significant noise impact on the facility as well as the surrounding community. To help minimize this impact, TA recommended a 20-foot wall of absorptive materials to enclose the three towers.

The helipad noise was relegated to already noisy corridors. Flight paths follow local freeways as much as possible rather than over residential areas. The helicopters also only operate during normal business hours.

From parking structures to helipad to birthing suites, TA's acoustical recommendations have proven successfully implemented and the new Kaiser Medical Center now serves its members in the Santa Clara Community--as quietly as possible.



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For more information: [Kaiser Santa Clara Medical Center](#)

Product Review: Polycom HDX 9004 HD Videoconferencing CODEC

The Polycom HDX 9004 is a high-definition (HD) Video Teleconferencing CODEC capable of sharing HD video, content, and high fidelity audio. The system offers both standard and HD video resolution of 720P at 30fps and two channels of 22 kHz crystal clear audio.

This CODEC offers the ability to communicate effectively at a level far beyond that of standard definition videoconferencing CODECs. A major advantage of this system is the ability to share content varying from CAD drawings to television ads at native resolutions in order to fully understand and coordinate decisions effectively.

As a standards base CODEC, the HDX 9004 is also compatible with any existing videoconferencing system. The connection may not be in HD when connecting to legacy systems, but this CODEC has the flexibility of transmitting HD when the network permits.

The HDX system is easy to integrate with the industry's highest level of flexibility for control, audio and video connections. Five HD video inputs are available for connecting anything from an HD document camera to DVD players.

If you need the ability to make decisions fast with high-resolution images over long distances, the HDX 9004 will give you the ability to do so with the confidence of HD clarity.

Visit <http://www.polycom.com/> for more information.

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