



acousticsolutions.com

**Acoustic Solutions for
Recreation Facilities**

Who we are



We've been providing acoustic solutions since 1974 with a vision of "protecting people" from ever-increasing noise pollution levels in our growing communities.

Our Competencies

MANUFACTURING – INSTALLATION – DESIGN SUPPORT

- One of the only fully integrated designers, manufacturers, and installers in North America with our own manufacturing facility and installation personnel.
- We believe we are one of the only Tier 1 noise containment manufacturers, designers, and constructors owned and operated by professional engineers in North America.
- We are a Bid-Build, Design Support-Build, and Design-Build containment constructor rather than a simple acoustics installer.
- Precision fabrication and only manufacturer using formaldehyde-free acoustic fiberglass.
- Hold a Certificate of Recognition (COR) and carry CGL insurance.

Acoustics Market Segments

MANUFACTURING | INSTALLATION | DESIGN SUPPORT



Sound Quality



Sound Control



Sound Masking

Sound Quality

Improve your sound quality (acoustics) by reducing echo/reverberation.



Solutions

Echotrol Acoustic Panels & Baffles | BOSS (Built on Site System) | Soundblox Masonry Blocks | Architectural Wood & Tectum Panels | Acoustic Ceiling Tiles | Acoustic Foam Baffles

Sound Quality

Necessary for all types of rooms including gyms, pools, arenas, churches, offices, music rooms, auditoriums, etc.



Definitions

NRC – The **Noise Reduction Coefficient** is the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption. The higher the number, the better.

RT – The Reverberation Time is the time it takes for the sound level in a space to decay by 60 dB. **The lower the number, the better, but this doesn't apply to music rooms/auditoriums.**

A – The Sabins of absorption is the area of the surface multiplied by the NRC of that surface. The higher the number, the better. NOTE THAT BAFFLES AND CLOUDS HAVE DOUBLE THE SURFACE AREA OF A WALL PANEL.

Sound Quality Treatment Alternatives

- Acoustic/Sound Absorbing Baffles (0.85 NRC)
- Acoustic/Sound Absorbing Panels (0.85 NRC)
- Tectum/Cementious Wood Wool (0.40-0.85 NRC)
- Soundblox (0.80 NRC)
- Acoustic Q-Deck (0.5 NRC)

All of these options work so it is a matter of cost, aesthetics, effectiveness, and safety. We sell all of these except acoustic deck.

Echotrol Foam Baffles



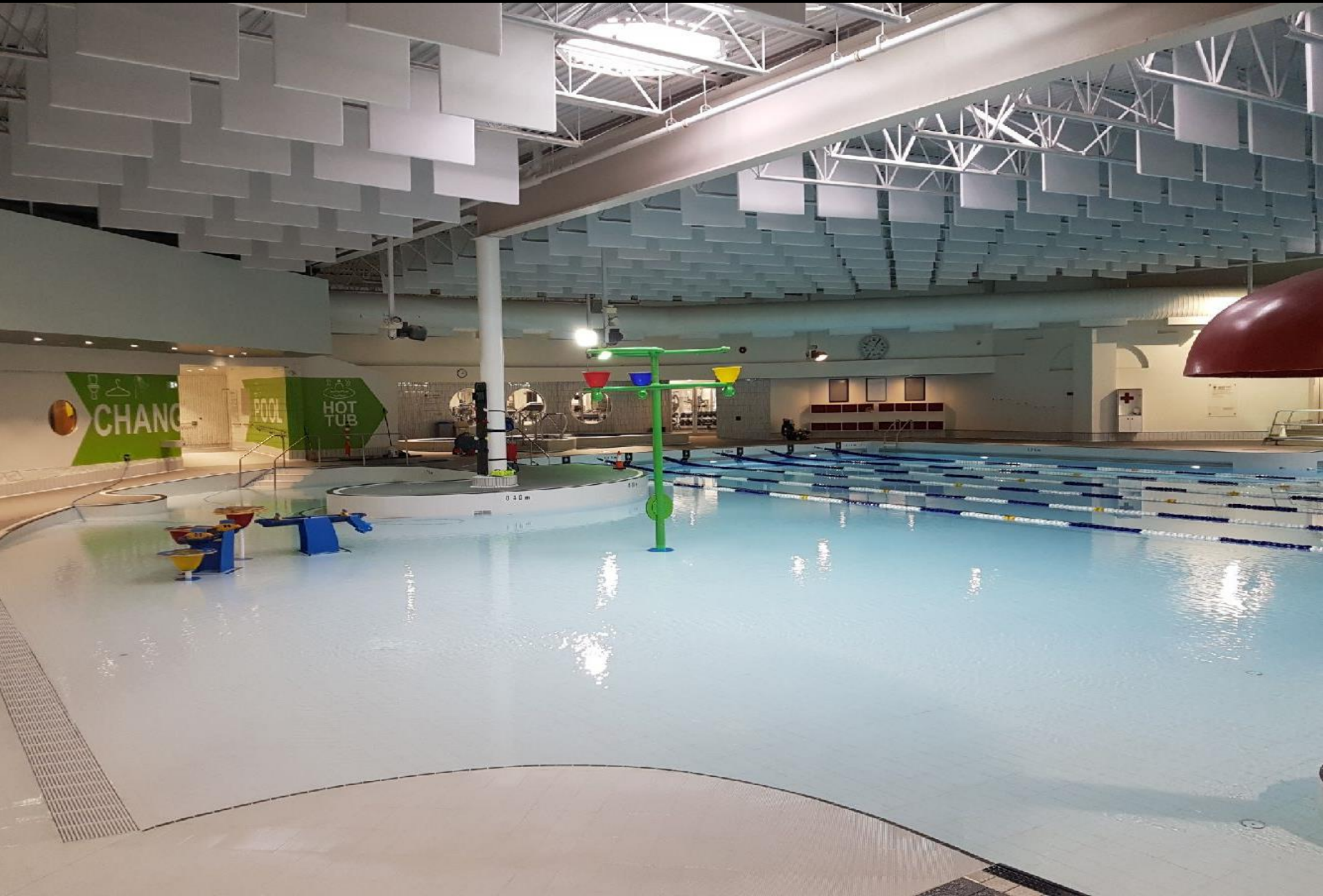
- Temple Sanctuary.
- Owner very pleased as inverted flower structure created terrible dome-like reverberation.



Echotrol Baffles



- Aquatic Centre.
- Attractive zig-zag layout versus right angles.
- Note that our baffles are firm and do not sag or look like floppy pillows.
- Fabric-wrapped Echotrol Baffles are manufactured at our Edmonton facility with formaldehyde-free fiberglass made in Redcliff, AB





Echotrol Baffles (and Panels)

- Rogers Place Second Arena. Oilers Entertainment Group very pleased with the sound quality and aesthetics.
- Fabric-wrapped Echotrol Baffles and Panels are manufactured at our Edmonton facility.





Problems with Pool Installations

- A company has installed a number of systems with these triangular or rectangular rigid baffles with "toilet chain" that rusts and breaks quickly. Remedy was piano wire that is also failing at ceiling fastener and wire...
- The baffles are rigid and will cause bodily injury if a child is struck. The fiberglass also isn't encapsulated so it will move into atmosphere if HVAC is directed at it.



Best Practices and Our Approach

- Frameless but firm but collapsing edge baffles in the rare case that a baffle falls from ceiling. Our baffles only weigh 7 lbs with no frame.
- Same thick gage zinc-plated screws as no signs of anything but surface corrosion and no ingress of moisture behind self-drilling thread.
- Composite 316 cable that doesn't see the atmosphere.
- No S-Hooks or other attachments at baffle end as those have been problematic as they need to be closed with pliers so the baffle can't fall off. We use high quality self closing thick gage fasteners at baffle end.
- We also use proper crimping tools and procedures for the cable.
- We only use WNC Technicians for our installations. Subcontractors are not manageable...

Echotrol Panels



- Post Secondary College Open Admn Area
- Attractive/Alternate school colors on balcony face.
- Fabric-wrapped Echotrol Panels are manufactured at our Edmonton facility.

Echotrol Panels



Echotrol Illumin-Art Panels



- University Lecture Theatre Renovation.
- 1"-3" panels for depth.
- Felt fabric and veneer wraps.
- Highlighted with raised acoustic panels w/ LED lighting.

Echotrol Printed Panels



- Private School.

Echotrol HD Panels



- Edmonton-Area High School Gym



Echotrol BOSS/Panels/Diffusers

- Largest Recording Studio in Western Canada at Grant MacEwan University.
- Echotrol BOSS, Panels, and perforated panels.



Echotrol Wood Facia Systems

- Large Recreation Centre Library in Edmonton.
- Large opening ratio for great absorption.
- Wood Slat System designed by WNC and manufactured in Edmonton.



Soundblox Acoustic Masonry Block

- High School Gymnasium with 4 walls of Soundblox plus acoustic deck.
- Incredible sound quality with RT likely less than 2.0 seconds. Treated 2 schools with just acoustic deck so it works but not well.



Sound Control

Control sound transmission within rooms



Solutions

Soundblox Masonry Blocks | Sound
Control Underlayment | Sound Control
Composites | Sound Control Ceiling
Tiles | Sound Control Door Systems

Sound Control

Necessary for all rooms, industrial equipment, vehicles, etc.



Definitions

STC – The **Sound Transmission Class** is a rating of how well a wall/barrier stops airborne sound. The higher the number (dB reduction), the better.

IIC – The **Impact Insulation Class** is a measure of a reduction in impact sound transferring from a floor surface to the room underneath. The higher the number, the better.

CAC – The Ceiling Attenuation Class is similar to STC but used to measure the effectiveness of ceiling tiles when walls terminate at T-bar elevation. Walls are rated using single pass tests to determine their STC rating because only 1 wall separates two rooms. This test isn't really applicable to ceilings because sound has to travel through 2 ceilings to move from 1 space to another. The higher the number, the better but most ceiling tiles are only marginally effective.

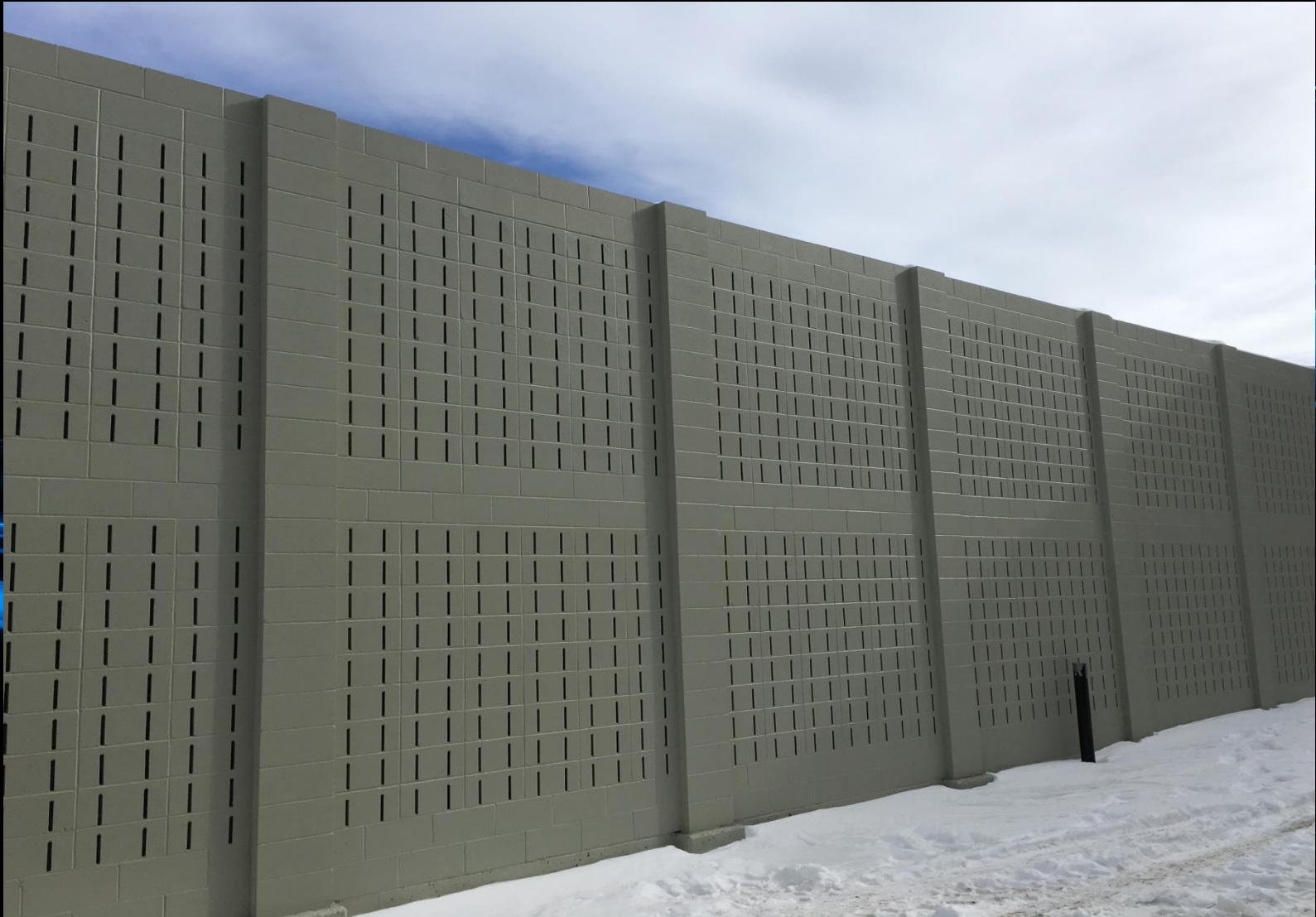
Composite Noise Barrier Curtains

- High School Library Mezzanine being used as Classroom. Library isn't so quiet as it's gathering place.
- Teacher "ecstatic" with result as replaced drapes that a drapery company sold as a soundproofing measure.
- **Note that mass = soundproofing so Roxul and spray foam do not work as no STC rating.** They are both absorbers and spray foam is closed cell so poor absorber vs. open cell acoustic foam.



Soundblox Acoustic Masonry Block

- Rec Centre Exterior Sound Walls for Condensers



Soundblox Acoustic Masonry Block

- Exterior Sound Walls for Transformers



Soundblox

- Left photo with Soundblox in correct placement position. Right photo shows separate sound chamber from grout/reinforcement chamber.
- Bottom photos should Filler Elements in place and separate. Thick metal septum creates an additional chamber within the chamber.



Sound Masking

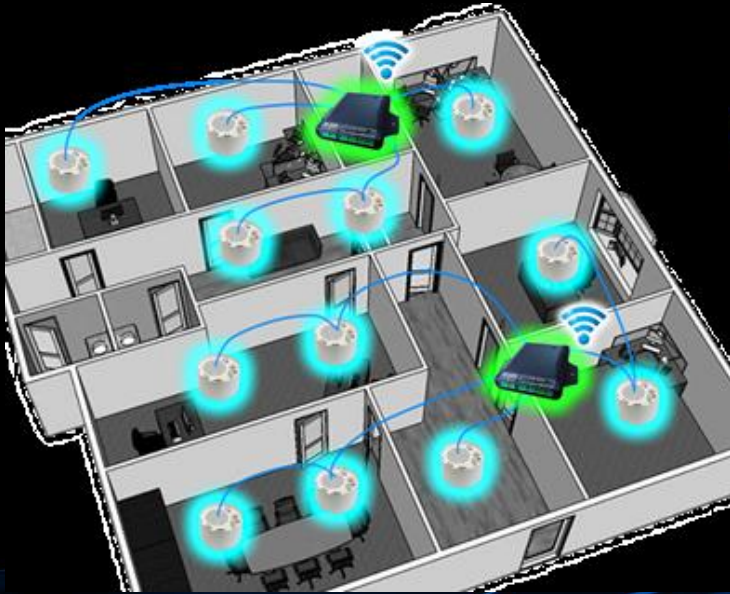
Reduce intelligibility of conversations when soundproofing isn't possible



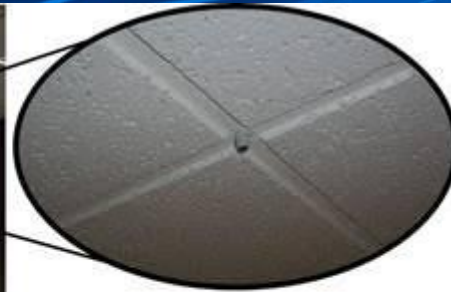
Solution

Soft dB, a Designer/Mfg | Engineered/Pink Noise | Exclusive Wi-Fi Interface | Patented Auto Volume Control | Patented Auto Calibration | User Friendly Virtual Office Software

Sound Masking



- ✓ Hidden Speakers in ceiling plenum.
- ✓ Zone amplifiers near speaker arrays instead of one in server room.
- ✓ Wifi amplifiers to a laptop for easy control and custom adjustments.
- ✓ Virtual "office" software makes owner-based adjustments easy.
- ✓ More speakers per zone for more homogeneous sound.



Our Sister Companies





HEALTH CONSERVATION CONSULTANTS INC.

Health Conservation

Protecting hearing and health in noisy and high risk work environments.



Solution

Audiometric Testing | Noise/Sound Maps |
Drug & Alcohol Testing | Pre-employment Fit-
for-Work Testing | Spirometry & Respirator Fit
Testing

✓Municipalities

✓Industrial Facilities

✓Refineries

✓Petrochemical Plants

✓Steel Fabricators

✓Machine Shops

Engineered Containment

Industry partners in environmental protection.



Geomembrane Liner Systems | Erosion & Sediment Control Systems | Geotextile & Geogrid Systems | Tarping & Visual Barrier Systems

- ✓ Storage Ponds
- ✓ Water Containment
- ✓ Tank Farms

- ✓ Produced Water Ponds
- ✓ Roadway Construction
- ✓ Storm Water & Downstream Protection