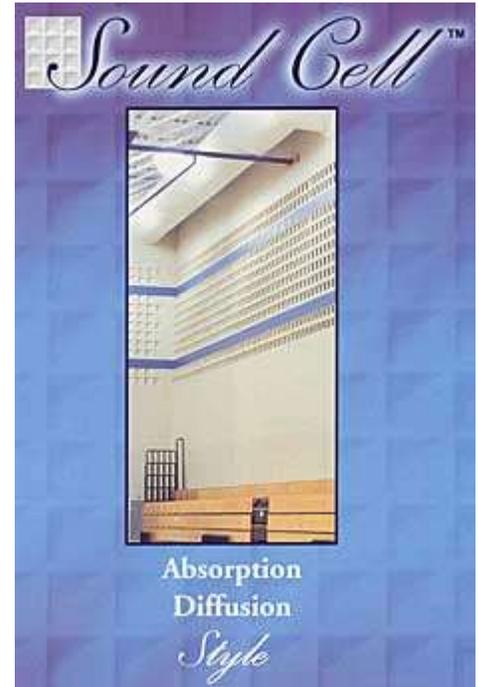
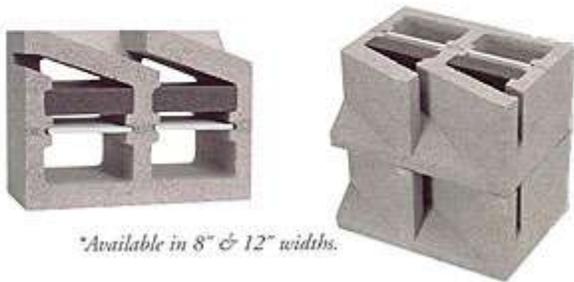


Sound Cell (Sound Absorbing Block)

Create an improved environment in architectural masonry acoustics. Sound Cell's design innovation is your practical solution to effectively absorb problem noise, diffuse sound energy and more thoroughly capture flutter echo, standing waves and sound intensity annoyances - with style.

 *Sound Cell*™



DIFFUSION

Improve Sound Quality

Diffusion is the random reflection and dispersion of the sound path after striking irregular shaped surfaces and reliefs. Many rooms utilizing flat, exposed masonry promote sound 'bounce' and problematic reflections. SOUND CELL improves the quality and nature of sound by providing desirable diffusion with its innovative grid and impressed form.



FLUTTER ECHO

Arrest Sound Annoyance

Flutter echo is characterized by discrete replications of the original source sound between two highly sound reflective surfaces more than 30 feet apart. Often heard as a high frequency 'ringing' or 'buzzing', it can be an annoyance to speech intelligibility as well as confusing to the ear. Flutter can be reduced by skewing walls as little as one inch to one foot (1:12). SOUND CELL has 77% of its surface area skewed to a (3:12) ratio in order to arrest this flutter echo annoyance.



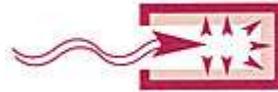
STANDING WAVE / RESONATE FREQUENCIES

Control Room Resonance



A typical square room design with parallel surfaces supports standing waves (notes and noises are sustained louder and longer) at frequencies which are determined by the size of the room. The fundamental resonant frequencies associated with room dimensions fall primarily in the bass (low frequency) range and give the building space a "boomy" quality. SOUND CELL does not produce opposite parallel surface planes and has an effective 1.2 absorption coefficient at the difficult-to-treat 125 Hz octave band to control the standing wave - resonate frequency effect.

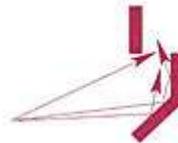
ABSORPTION / HELMHOLTZ RESONATOR



Capture & Eliminate Noise

SOUND CELL utilizes a stacking, slot-type, Helmholtz volume resonator to achieve sound absorption at all frequencies. The 12" unit offers an unmatched 100% average absorption efficiency at the 100-125-160-200 Hz frequency bandwidth. This low frequency absorption is invaluable in supplying sound control that cannot be captured by carpets, drapes, acoustical tiles and similar items.

THE PINNA / PHASE ANGLE / LOUDNESS



Soften Loudness

If we had just holes in our heads, less sound would enter our ears. God designed the pinna, or outer ear, as a sound gathering device to funnel sound into the auditory canal. Reflected rays reach the opening later than the direct rays which constitutes a phase angle between the direct and reflected components. Measurements have shown that the two alternately add in phase for a 5 dB increase in sound-pressure level. Sound-pressure level (a physical measure) cannot be equated to loudness (a subjective effect) but they do go hand-in-hand. The skewed and sloped faces of SOUND CELL act as a pinna to focus and direct additional reflected sound to the aperture of the unit. More sound pressure enters SOUND CELL resulting in diminished sound loudness in a room.

SUGGESTED SOUND CELL™ SPECIFICATIONS

Provide SOUND CELL acoustical masonry units conforming to ASTM C90 with factory installed noise attenuating fillers.

STORAGE, HANDLING & INSTALLATION: SOUND CELL units shall be kept dry and handled to protect from chipping. Units shall be laid in stacked bond with 3/8" mortar joints. Mortar joints shall be struck flush, filled and dressed on the face-side of the units, and shall be tooled, brushed, and finish-tooled on the back-side of the units. Contractor shall keep units clean and dry during installation. Units shall be laid consistent with the best concrete masonry practices, including: full face shell mortar bedding, control joints and wire reinforcing (utilize 10" wire for 12" units; 6" wire for 8" units). Solid Tops, Bond Beams, or Thickened face-shell units shall be utilized as a course separating the SOUND CELL units from the regular utility C.M.U.s in order to insure correct face-shell alignment. (See critical wall section detail and review with Engineer and Mason Contractor.)

ABSORPTION COEFFICIENT

FREQUENCY - HERTZ

SOUND CELL / WALL SECTION

"After field testing the resonant frequency of the Sound Cell wall assembly, I found that the effects of the room response characteristics were consistent with the frequency sound absorption coefficients that you have published."

John Ebli, President, Acoustical Consultant M² Group

SIZE	100	125	160	200	250	315	400	500	630	800	1K	1.3K	1.6K	2K	2.5K	3.2K	4K	5K	NRC	SAA
12"	1.20	.95	.96	.89	.64	.55	.54	.55	.60	.72	.74	.76	.79	.81	.75	.73	.72	.73	.70	.70
8"	.50	.67	.94	1.16	.89	.68	.59	.51	.55	.66	.75	.78	.79	.77	.71	.68	.69	.69	.75	.74

Sound Absorption tests performed by the Riverbank Acoustical Laboratories conforming to ASTM C423 and E795. Test reports available upon request.