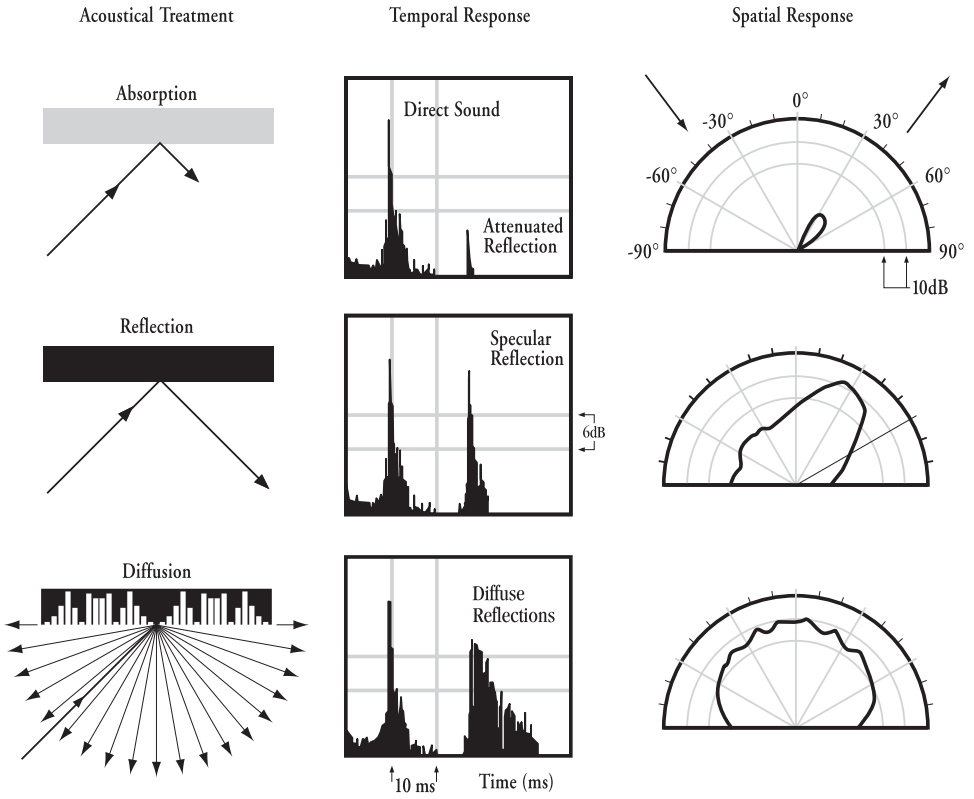
The RPG System



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From The Acoustical Industry's Leading Innovator

The sound that is heard in most environments is a combination of the direct sound straight from the source or sources, and the indirect reflections from surfaces and other objects. For instance, in room acoustics, both the direct sound and the reflections from the walls, ceiling and floor are key in determining the quality of the acoustics. Hence, one of the central topics in acoustics is how to manipulate these reflections that affect the way the sound propagates, and is ultimately perceived. Sound striking a surface is transmitted, absorbed or reflected. The surface's acoustic properties determine the amount of energy going into transmission, absorption or reflection. The reflected sound can either be redirected by large flat surfaces (specularly reflected), or scattered by a diffusing surface. When a significant portion of the reflected sound is spatially and temporally dispersed, this is a diffuse reflection, and the surface involved is often termed a diffusor. The Figure illustrates temporal and spatial characteristics of absorbing, specularly reflecting and diffusing surfaces, which form the acoustical palette. ***Sound is attenuated by absorption, re-directed by reflection and uniformly distributed by diffusion.***

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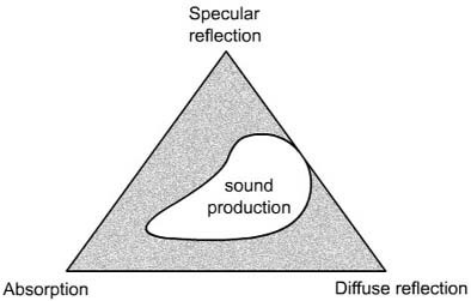
The RPG Acoustical System

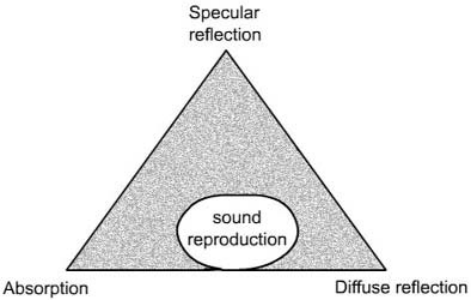
Good architectural acoustic design requires the right room volume, the right room shape and surface treatments, utilizing an appropriate combination and placement of absorbers, diffusers and flat surfaces. Architectural acoustic spaces can be loosely divided into sound production, sound reproduction and noise control environments.



Examples include, Concert Halls, Recital Halls, Auditorium, Theater, Studio, Courtroom and Worship Space.

Sound Production

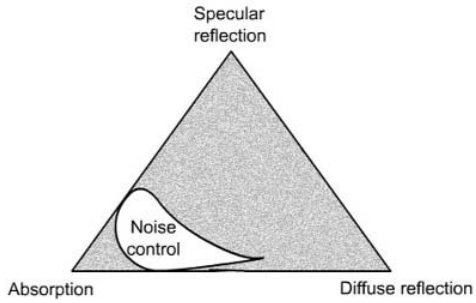
An example of a sound production room is the performing arts facility, such as concert halls for classical music or a theatre for speech. The room acoustics contributes greatly to the perceived sound of the music or speech. The arrival time, direction and temporal density and level of the early reflections, coupled with the balance of the early to late energy, decay time, temporal and spatial density of the late reflections, define the quality of sound that is heard. In large, sound production rooms, reflection and diffuse reflection are the primary acoustic tools. Limited absorption may be used to control reverberance.



Examples include Recording and Broadcast Studio, Home/Commercial Theater, Distance Learning, Museum Exhibit

Sound Reproduction

In contrast, the acoustics of sound reproduction rooms, like recording studios and home theatres, should be neutral. All of the spectral, timbre and spatial information is prerecorded on the playback media, and the reproduction room is only there to allow a listener to hear what has been recorded, as it was recorded. In a sound reproduction room, absorption and diffuse reflection play a key role and specular reflection is a minor contributor. Absorption and diffusion are used to control the coloration that would otherwise occur in the space from early arriving reflections and low frequency modes..



Examples include Gymnasium, Swimming Pool, Restaurant, Library, Atrium, Lobby, Factory and Road Barrier

Noise Control

In noise control situations, like gymnasiums, swimming pools and lobbies, the objective is simply to reduce the reverberance and sound level. This might be done to reduce sound levels prevent hearing damage, or improve the intelligibility of speech. Uniform distribution of absorption is the primary acoustic tool and specular reflection and diffuse reflection have more minor roles.

The RPG Acoustical Palette provides designers with a complete package of absorptive, reflective and diffusive options in a variety of materials, aesthetics and costs for use in sound production, sound reproduction and noise control spaces.

1. Absorbors

When sound absorption is required, RPG provides a variety of low, mid, high, and broadband absorbers in wood, fabric, plaster, foam, concrete block, metal, scintered glass and transparent materials.

2. Reflectors

Typically, reflection happens by default where the concrete or gypsum substrate is not treated with acoustic materials. However, the designer often wants no visual difference between the sound absorptive treatment and the remaining surface areas. RPG responds with options for treatments that look like the absorptive surfaces, but in reality are sound-reflective.

3. Diffusors

When sound diffusion is required, there simply is no other choice. RPG pioneered the industry twenty years ago and has remained the distant leader ever since. RPG offers the widest range of mid, high and broadband diffusors in wood, concrete block, plastic and painted gypsum.

4. Hybrid Absorbors/Diffusors

At times, the same surface must absorb certain frequencies and reflect or diffuse other frequencies. The only solution is RPG's hybrid diffsorbers that allow you to choose product options or mounting options that fine tune the performance at difference frequencies.

5. Service

Your time is limited. Trust the acoustics to RPG. Rest assured that our expert acousticians will utilize their vast education and experience to provide you with complete, accurate, concise information, exactly when you need it, the way you need it.

- Early budget pricing
- Application assistance
- Computer modeling & auditory simulations
- Qualitative acoustic cost/benefit analysis
- Samples, literature & test data
- CSI Specifications & AutoCAD mounting details
- Value engineering guidance
- Excellent project management
- On time delivery
- High quality products & amazing acoustic performance