

Acoustical Design of Music Education Facilities

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Published in 1990

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Introduction

Few groups of people are more sensitive to the acoustical environment than musicians. A musician's mission in life is to stimulate memories of emotions by organizing sounds in time. The achievement of excellence in the art is invariably the result of years of instruction, study, practice, rehearsal and performance.

As students overcome the purely technical limitations of their instruments, they begin to develop an awareness of their acoustical environment. The maturing musician learns to exploit the acoustical environment as a component of musical expression, and for the professional musician, the acoustical response of a room becomes the very warp into which the threads of music are woven. Unfortunately, an unresponsive or inappropriate acoustical environment can distort the meaning of a music phrase or gesture.

While professional performers and conductors have developed methods which may partially compensate for some idiosyncracies of the acoustical environment, young musicians have developed neither the critical listening skills nor the technique to diagnose the acoustical difficulties or adjust to unfavorable conditions. Since most aspects of music-making are learned through imitation, music students must be given the opportunity to experience music in consistently good acoustical surroundings if they are to reach their full musical potential.

The acoustical limitations of a music education facility can seriously detract from the educational process. When prodded, music educators often confess that their relationship with their teaching facilities is stormy. They may love a room for one musical activity but hate it for another. The few rooms that do function well acoustically are often severely over-scheduled. Faculty members compete for well-isolated studios. They see their students' progress being retarded by acoustically discouraging environments.

In order to alleviate their difficulties, a music facility typically forms a building committee to study and act on the situation. Design experts are called in, and meetings begin. The design and construction process, however, is usually as unfamiliar to the music educator as the rules of species counterpoint are to design professionals. Music educators serving on a building committee for the first time are usually bewildered by the magnitude of the faculty's expectations, and what's more, the design professionals seem to have already developed their own agendas. However, once all parties have become familiar with needs of the music education program and communication links have been established, music educators generally find that they enjoy their roles as full partners in the design process.

Similarly, design professionals also need time to adjust to the conditions and personalities unique to each building effort. Designers who become truly familiar with the actual processes of music education find that they can usually help building committees avoid the pitfalls that have crippled music education programs in the past. Because music is primarily an aural experience, the effective design team places the acoustical design of a music education facility at the center of its thinking.

Acoustical Design of Music Education Facilities is an attempt to convey to a broad readership the multitude of decisions that must be made by a dedicated building committee and design team if a truly superior music education facility is to result. It has been compiled for those design professionals, music educators, administrators, facility managers, and students who want to understand why some facilities are more successful than others.

The information within this publication is partially the result of special sessions organized by the Technical Committee on Architectural Acoustics that took place in Syracuse, New York during the course of the 117th meeting of the Acoustical Society of America in 1989. During those sessions professional consultants in acoustics presented evidence of their experience in the design of music education facilities in the form of lectures and posters. While the majority of the contributors practiced primarily in North America, contributors from Europe, Africa, Oceania and the Far East helped to present a world view on the subject. The results of the poster session are reproduced here in their entirety, and some of the lectures have been published as essays. Subsequent to the meeting, other design professionals were solicited for their views on the subject. Their essays also appear here because they touch on many aspects of the design and construction process that impact on the acoustical design of music education facilities.

This publication is not without precedent. Three other books have been published by the American Institute of Physics for the Acoustical Society of America. The first was Halls for Music Performance: Two Decades of Experience 1962-1982 documenting 86 music halls from around the world. The second in the series was Acoustics of Worship Spaces including invited essays discussing acoustical and other design considerations along with information on 43 completed worship spaces. The third publication, Theatres for Drama Performance: Recent Experiences in Acoustical Design, continued this tradition with 49 facilities and seven invited essays.

We hope that this most recent effort will foster the design and construction of music education facilities where cultures and societies will be drawn together by their common interests and where independent thinking and new forms of expression will be stimulated by their differences.

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July 1990

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