

ARTS BUILDINGS TAKE CAMPUS CENTER STAGE



By
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As Seen In
*Banker & Tradesman
Structures*

Performing arts centers are venues that can differentiate a school from its competition and, if desired, provide an additional source of revenue. With increasing frequency, independent schools, colleges and universities are adding specialty buildings for this purpose to their campuses to meet the demands of a highly competitive marketplace.

But these facilities bring a host of issues to be considered that just don't come into play with the majority of academic buildings.

Regardless of the specific type of performing arts to be supported, these buildings are big and tall. They will be visually prominent wherever they are located. Finding an appropriate site on a functioning campus can be challenging— one where such a visible structure

won't interact negatively with other facilities, a site where there is room to stage the building's large roof trusses during construction or to set a crane that's big enough to raise them to the top of the high auditorium walls.

A thorough needs assessment is critical to a successful project. The institution and the design team must reach a complete understanding of the types of performances and other activities that will happen in the facility before any other decisions are made. A venue for choral and ensemble performances has a different requirements than one that will host theatrical productions; and an auditorium that can be used for lectures and meetings must include different amenities than one that will showcase dance. The uses will dictate the building's dimensions, acoustic requirements, and audio visual needs— all elements that will have a great impact on the project's budget and schedule.

Because performing arts centers are not easily renovated, re-configured or converted to other uses, the programming phase is particularly crucial. Choosing an architect with experience in designing performing arts centers

is important, but selecting one with a real understanding of the sensitive issues of working on an active academic campus is critical. The architect can help guide the needs assessment by interviewing faculty, administration and trustees; and can help determine the parameters for the facility.

These same criteria are wise considerations when choosing a construction manager, and bringing one on board early will help to streamline the planning process. According to Paul Viccica, project manager for the design team from CBT Architects on the new Center for the Arts at Saint Mark's School in Southborough, having Erland Construction join the team during preconstruction helped the school address issues of "need versus want" by providing budget estimates of various options.

Little Leeway

Of all building types, performing arts centers offer the least flexibility in developing the construction plan. The size and components dictate the sequence, and there is little opportunity to manage the schedule by grouping tasks. All performing arts centers are essentially one really big room. Most often, work must begin in

the middle so that space for systems that will be housed below ground level - the orchestra pit, the arbor pit for rigging scenery or curtain counterweights, the HVAC ductwork - can be readied before the walls go up. The sloped or tiered floor cannot be placed until all overhead work requiring lifts is completed.

Once enclosed, multiple trades must work together in this room simultaneously. Projects are most satisfying when the client understands the schedule constraints and the construction manager has built in some extra time for minor delays.

The walls of this very high performance space bring many challenges of their own. The cavernous dimensions of the auditorium yield an enormous clear span so that the walls must

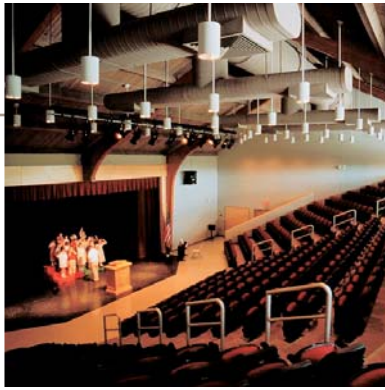


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be braced during construction until the roof trusses can be installed.

For maximum acoustical integrity, the walls are most frequently constructed of reinforced masonry to control reverberation. But masonry freezes in cold weather, and heating the entire wall height can be problematic. So unless a project can be timed to avoid winter conditions, complex, temporary heating systems must be devised. While constructing the Rogers Center for the Performing Arts at Merrimack College in North Andover, an adapted portable glycol loop furnace was used by running a 1.5" rubber hose covered with insulating blankets along the top on the masonry walls which circulated hot water at night.

More sophisticated equipment is required for a facility that will be used for theatrical productions, especially musicals. Metal catwalks, balconies and set/curtain rigging must be coordinated with structural elements and, in some cases, installed before the space is fully enclosed, as was the case at the Sorenson Center for the Arts at Babson College in



Wellesley. If a "fly" over the stage area is desired for raising and lowering stage sets, it must be included in the design from the start. All this points to pre-purchasing long lead items so that the schedule is not compromised by their availability or by coordination with other building components, especially since it isn't possible to install them later on.

Acoustical excellence is almost always a primary goal of every performing arts center. Achieving it requires material and sound systems to minimize or eliminate ambient noise. The Saint Mark's School Center for the Arts will be used for choral and ensemble performances, but it will also serve as the main auditorium for student and faculty assemblies. To maintain the intimate feeling of the school community, the acoustics were designed so that no amplification is needed to address a full house, something that could only be accomplished during the design phase.

The construction manager must understand the dynamics of acoustics, and how construction components and processes can

have an impact. Value engineering is not so straight-forward on a performing arts center because the ways alternative materials reflect or absorb sound make them less interchangeable than they would be on another type of facility.

The HVAC system should be designed with noise considerations in mind. While it is necessary to have a continual change of air in the performance chamber, the air must move at a very low velocity for minimal sound. All low voltage sound system wires should be enclosed in conduit to control interference. Mechanical equipment should be segregated to reduce the humming that results from sound system interference. All ductwork, piping and ceilings must be hung using special hangers that isolate them and eliminate vibration. Their relative locations must also be coordinated to ensure that they do not contact each other and cause vibration.

There are performance venues that are not quite so complicated: currently under construction is a black box theater for the Beaver Country Day School in Brookline. This versatile Center for the Performing Arts does not have a built-in stage, making it adaptable for a variety of performing and

visual arts. This type of space may be very attractive for schools that aren't yet ready to commit resources to a more specialized set of uses.

Performing arts centers do much to enhance the quality of life on a school campus. With good planning, and a project team with an experienced architect and construction manager, the academic community can be assured of having a facility that really meets their needs, both immediately, and in the future.

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