What's a Black Box, anyway?

'Black box' is a generic term that usually describes a flat floor space with some way to hang lighting fixtures overhead, in which performances occur. Many (too many) are painted flat black on walls, floor and ceiling, which is usually open to the structure and mechanical system. Beyond that, its characteristics are specific to an individual space. It's often inserted into an existing building, a 'found space', and is often industrial, even gritty.

At its origin in the 1920s, championed by the influential director Adolphe Appia, the black box was about flexible staging techniques. Mostly it has been mostly about drama and the ability to modify the audience/performer relationship to suit a particular production - which is pretty much the same thing as flexible staging techniques. Recently it seems to be about inexpensive construction - "We can't afford a 'real' theatre so we'll build a black box." That attitude is frequently accompanied by the idea that because the black box is flexible, it is suited to every type of activity.

Imagine a planned civic cultural arts center in a town without the resources to justify or fund a typical 300-500 seat proscenium theatre. There are theatre groups, music groups, dance groups without a place to perform, or forced to rent an expensive and possibly over-sized (for them) college or high school facility, trying to fill a 50' wide proscenium with a children's theatre production of *Pinocchio*. A flexible space seems like an important feature in the town's new community center - it will do theatre and music and dance and we can have yoga classes and dinner theatre and receptions! Well.....yes and no. What the owners frequently don't understand and sometimes won't be convinced of, is the need for thorough understanding of the nature of this particular beast and how to tame it.

A theatre planner's first question for a performance facility is, "What's it for?" The usual answer is 'everything', but it's critical to determine priorities among events - if everything has first priority, nothing has first priority, and the resulting facility is likely to do everything in a mediocre fashion. If 'everything' is supposed to include drama, music, dance, film, lecture/presentation, and flat-floor events like classes, receptions, etc. how is one space going to accommodate all that? A black box will be a far from perfect answer, but provision for some special accommodations can help.

Key considerations for different event types:

For music: Some sort of acoustical reflectors above or among the lighting pipes to return sound to the audience instead of losing it among the ducts and other overhead space junk. Acoustical curtains which can be extended along the walls and stored in hard-walled pockets to remove them completely from the acoustic environment of the room. The most cost effective way to provide a supportive acoustic environment may mean determining a single audience-performer relationship for live unamplified music. The most expensive way would be to install an electronically-enhanced acoustic system which provides a near-infinite range of room responses. It's critical to understand that the volume of the room also limits the type and size of musical events that can occur with or without electronica assistance. Most black boxes are not large enough to accommodate an amplified jazz

band, for instance; it would simply be too loud. A full orchestral band probably won't fit, or won't leave any room for audience. It might be able to accommodate a rehearsal, if the designers include that possibility from the outset.

For drama: Good access to lighting, which is discussed in detail below, a control system sophisticated enough to easily reconfigure house lighting as well as stage lighting to any configuration. A flat, wide path from exterior loading to the black box, with large doors for such scenery as is needed. One of the advantages of a black box for drama, beyond intimacy, is relatively little emphasis on scenery, which eases production requirements for small groups, experimental productions etc. Circulation and multiple entrances are also key to flexibility in drama, described more thoroughly below.

For film/lecture/multi-media presentation: For speech intelligibility and for appropriate acoustic environment for film, the room should be acoustically dead, or nearly so. This is where the acoustic curtains or electronically-enhanced systems described above provide the wide range of flexibility needed. Like unamplified music, it will likely be most time and cost effective to determine the best configuration for this type of event and stick to it. A motorized projection screen, thoughtfully placed, will be a necessity, and is not easily moved. The screen itself (also not easily moved) could be installed later if with budget is tight, as long as the planning and infrastructure are in place. In addition, there is a regulated "hazard zone" for laser-illuminated projectors which must be kept clear and may be in issue in small spaces. Many projector manufacturers have helpful information on their websites.

For dance: Black boxes are poorly suited for traditional Western dance forms as there is seldom space to accommodate dancers exiting the audience view at speed and not crashing into walls. Many world or ethnic dance forms tend to be more circular with less emphasis on entrance and exit and can be better accommodated, but the floor surface must be resilient to prevent injury. A standard multi-purpose stage floor provides a basic level of resiliency for most events, but an appropriate portable vinyl dance surface - a 'Marley' - will still be needed for dance performance. Such surfaces are heavy and require storage carts and a place to put them.

A word about the floor - a multipurpose dance floor is constructed of various layers of wood material with airspace on top of resilient pads and generally has a hard-wearing top layer like hardboard ("Masonite") which can be painted for an individual production, nailed/screwed into, repainted, etc., but quickly and easily replaced from a nearby lumber yard when it's in bad shape. This is good for drama, but it does not provide the formal, hardwood floor one might wish for in a music room or for a formal public event, and per above, still requires a vinyl rollout surface for dance. It is also good for movement and dance classes, though yoga and other floor-based disciplines would still require mats. What type of surface flooring to choose should be related to the event priorities, but in no circumstances would I recommend concrete, though there are times when the project has had to live with it.

For public events, receptions, parties, etc.: A room that can be made to be festive and pleasant! A black box does not have to be black, and it doesn't have to be industrial or ugly. What it should be, for performing arts, is neutral when in performance mode. The architecture, finishes and colors, should recede into the darkness as the show begins. But there is no reason that natural light can't be introduced when desired, as long as it can be completely controlled for performing arts events. The finishes can be sophisticated, as

long as they are not reflective, they can be warm and non-black as long as they are dark enough to disappear when the houselights go down. The acoustical reflectors discussed above can be wood or laminated or painted to provide a visual ceiling which helps conceal the lighting and other machinery overhead. The lighting access (catwalks etc.) can be used to suspend banners, chandeliers or other elements to create atmosphere. It will be for the owners to determine whether they wish to own tables and chairs for these events or have the producers rent them from event companies. The inclusion of a warming or catering kitchen and equipment may also be worthwhile and should be considered.

For all events:

Size: Early in the programming phase, one of the first decisions is the size of the space, and that discussion often starts with audience capacity. "We need to seat 375 people" we are instructed. In what format? Is that the maximum for a public meeting on a hot-button issue? Is that for drama in the round? Is that for a cocktail party? How big is the performance area for those events? The code-mandated row, aisle and exiting clearances, the need for performer entrances and exits, the space for operation of technical systems all must be considered when determining the size of the room. Understanding and accommodating these needs is an important first step in the programming process between owner, architect, and theatre consultant.

Entrances: If a space is to be successfully flexible in fact, not just in name, it is highly recommended that there be entrances in each corner of the space, connected to circulation which will support the various configurations. An entrance for audiences in one production may admit performers in another, but only if those entrances and circulation exist and have workable (and code compliant) relationships to the rest of the facility. That circulation increases the overall footprint, and thus cost, of the black box. In addition, consideration must be given to circulation in *time*. Performers and audiences should not use the same paths at the same time - audiences should not encounter the performers except in the context of the performance.

Lighting: Overhead access to lighting is very important. The least expensive is a simple pipe grid for lighting, curtains, speaker, monitors, etc. but a stand-alone pipe grid can only be accessed via ladder or personnel lift from the floor, which requires that the floor be clear when lighting is installed or modified - meaning that seating risers, seats, scenery, etc. must be moved out of the way, and if a light happens to fail too near performance time there is nothing to be done about it. Because this is the least expensive it is often hard to move the Owner toward better solutions.

There are other ways of accessing lighting that are not from the floor; fixed and rolling catwalks, tension grids, hoists, even entirely motorized grids, but each has costs and subsidiary requirements that must be designed into the facility from the beginning to achieve the flexibility and quality the Owner expects. It is enormously better to have access to the overhead equipment at all times; it may be a big line item in the original budget but it will be an asset of convenience and reduced labor cost for the life of building.

The LED revolution had just started when this article was first written, and now that LED light fixtures are standard in nearly all new performance spaces, we find that many owners believe that since they last so long, access is less important, which is a misunderstanding

of the function of theatrical lighting. Theatrical lighting design provides mood, atmosphere, signals changes in time, location, and much more. Every dramatic production has a unique arrangement of fixtures placed and focused for that play alone, so that it is true that light failures have become very rare, the need to access the lights to hang, circuit and focus from the pipe grid is not lessened.

Control room/tech systems: The design team must consider control of technical systems; lighting, sound, projections, screens, etc. A fixed, elevated control room provides a convenient and secure location for equipment and for operating it, but in a flexible environment that control room is likely to be in the wrong relationship to the performance some percentage of the time, and a fixed control room will be required to be handicapped-accessible, requiring a platform lift or elevator (unless the black box is in a two-story building, which would have a separate elevator.) The fixed control room can also be used to pre-record effects, provide instruction in use of equipment, etc. It is also the case that most flexible spaces will have a logical "default" configuration and the control room can have the appropriate relationship to that configuration - the one that also allows for a speaker and projection screen for instance. A fixed room removes the noise of equipment and operators from the audience chamber. Subsidiary receptacles for the control equipment can be scattered around the walls to accommodate other configurations, and sometimes these other locations can satisfy the requirement for accessibility, though it's far better to incorporate accessibility throughout the facility. The fixed control room is another feature which increases capital costs but pays returns in utility.

Seating: To vary the audience/performer configurations, platforms, risers, step units, railings and chairs are required to create the various relationships and provide good sightlines for audiences. Most of this equipment is heavy, awkward and requires a lot of set up time. It also requires a significant amount of storage space; the owner must decide how much of this should be owned outright and how much the individual users will have to rent.

And so:

Because of the issues described, it has been the experience of many users that a black box tends to remain in the configuration that works best for the most frequent activity and is seldom, if ever, reconfigured to take advantage of the flexibility that is its hallmark, due to the time and labor involved in changeovers.

How can it be made to work well? The black box theatre is the prime example of the flexibility conundrum - users and owners champion it for its flexibility yet often do not have the resources to use it effectively. The conundrum is how to balance flexibility and labor without vastly increasing capital costs.* One recommended workable solution is to perform careful analysis of the most useful and frequent layouts and devote sufficient resources to make changeovers between those 2 or perhaps 3 layouts as easy as the budget, design effort, and equipment will allow. This is the approach that was used by the Oregon Shakespeare Festival (OSF) during programming for what became the Thomas Theatre. OSF performs in true repertory style - changing from one production to another after each afternoon matinee in each of their three theatres; they understand it as deeply as any group in the US. During programming they told the design team that they had to be able to change both the audience/performer relationship and the production scenery in 2 hours, and that they wanted the design to streamline that for three standard

configurations that would be used regularly. (Other configurations can be created on occasion but are outside of the base plan.) The team and OSF created customized seating and rigging equipment and catwalks to make it happen that way and it works like clockwork.*** This approach combines a reasonable amount of capital cost with a recognized amount of labor and delivers three different and workable configurations, providing variety and creative opportunity for the theatre-makers and their audiences.

A black box can be a wonderful venue for a wide range of events, providing an intimate exchange between performer and audience. It can be a creative tool for the makers of those events as well, but it will work best when those who will own it, work in it and design it all understand the opportunities and challenges involved in creating a good one. And that understanding is most effective when developed at the earliest stage - programming the project before design.**

*As a sample of the extreme, in both flexibility and cost, take at look at the Wyly Theatre in Dallas http://www.attpac.org/your-visit/venues/wyly-theatre/

**For those of you not familiar with the term programming, it refers to the definition and description of an building project before the actual architectural design begins.

***Since this article was written, the Oregon Shakespeare Festival has stopped changing both the configuration and the production between afternoon and evening performances. Even for their exceptional staff it required more working hours than were sustainable.