

# Lighting when ceilings are short

HOWs often face limitations on ceiling height in their worship spaces. For such cases, **John Black** discusses effective lighting techniques

## WHETHER WORKING IN A HOUSE

of worship, school theatre or other venues where finances are tight during a building project, those looking for ways to decrease costs often compromise on the vertical height of a sanctuary or performance space. After all, vertical space is expensive and is only used for lighting and production equipment. I manage three school theatre facilities – one of which has a half-height flyspace and another with just enough ceiling space to mask the height of a single piece of standard truss out of the audience's view.

Despite these vertical challenges, though, it is still possible to light a stage effectively and creatively. What it takes is an understanding of your specific facility and the effort to find the right products with the right features for

## MEET THE AUTHOR

John Black serves as the theatre manager for Seoul Foreign School in Seoul, South Korea. Holding a degree in Theatre Design, he provides technical production support and design in three state-of-the-art performance venues on campus for over 40 major concerts and productions a year in the areas of sound, lighting, video and staging. John especially enjoys sharing his passion for entertainment technology with high-school students each year through his student production team, *Crusader Live!*, giving students the opportunity to learn and work with professional-level technologies in a demanding production environment.



**John Black, theatre manager for Seoul Foreign School**

what you are trying to achieve. In this article, we will look at a few techniques that I have found useful when lighting in situations where ceilings are short, as well as some specific product features that I have found to be effective tools when lighting in these situations.

## Flexible lighting positions

While in most circumstances you won't be able to do anything about the height of the ceiling, the first thing that you should consider is where you will place the lighting fixtures. After all, the positions that you choose will determine the angles and possible looks you will be able to achieve.



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Having a good assortment of positions to allow for front, side and back/top lighting will serve you well, but, in cases of low ceilings, there are some additional things to consider.

Let's look at washing the stage in colour. Colour washes are most often created using back/top lighting positions. In facilities with higher ceilings, these positions will often be masked with curtains or are so high that they are out of the congregation's natural field of view when looking at a person on the stage. When ceilings are short, masking can



**Electronic Theatre Controls (ETC) Source 4WRD LED ellipsoidal fixture**



**Elation Professional DW Fresnel fixture**

severely limit the area that can be lit and also make the ceiling appear even shorter than it really is. Additionally, the lighting

fixtures themselves come into the field of view of the congregation and the fixtures can be blindingly bright.

The more that fixtures can be focused in a top light position, the less distracting and blinding the light will be.

The pool of light will behave similarly to a back light position and be effective in pulling the presenter out from a background. Depending on the depth of the stage, the height of your ceiling

and the fixture beam angle, you may need one, two or several of these positions to be able to wash the entire stage.

Side lighting is useful in creating some unique lighting looks as well as providing additional angles for lighting presenters, filling in any side shadows that may be created by less than ideal front lighting. If your house of worship is used for any kind of drama or dance presentations, these positions will be very useful for sculpting actors and dancers. I would recommend having side lighting positions as deep as the stage, as well as some on the side of the auditorium seating area. One example of where side/front lighting

can be particularly effective is when a standard projection screen and projector is used for imagery instead of LED or LCD display monitors. In situations with low ceilings, the angle for front lighting often results in light bleed onto projection surfaces unless the presenters are able to be in a space entirely removed from the projection area. When this is not possible, having side/side-front lighting positions can allow you to light the presenters with no bleed, or as little bleed onto the projection surface as possible.

Front lighting may be the most challenging position to deal with in situations where ceilings are short. For the reason just mentioned, front lighting can result in light bleed onto undesired surfaces on or around the stage depending on where the presenter is positioned. However, the difficulty lies not just on what the congregation sees on the stage. When ceilings are short, front lighting often results in light beams at very shallow angles, meaning that the bright glare of fixtures is pointed directly into the eyes of those on stage. While there may be some situations where a presenter doesn't want to see the audience, most often than not in the house of worship market, those on stage want to see and make eye contact with congregants

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throughout a service. Therefore, having front lights pointed nearly horizontal into their eyes is less than ideal. To combat this, front lighting fixtures can either be spread wide apart so that a presenter can look in between the light beams, or the front light position can be positioned close enough to the stage that the angle of the front light is as steep as comfortably possible. This often does not produce very good results as the lighting angles can produce unnatural facial shadows. Despite this, I have found that I will usually opt to place the front lights closer to the stage as getting the angle as steep as possible is what is most comfortable for the presenter. The low shadows that are often produced I will resolve by using footlights, lighting the presenters from the ground softly to fill in the lower shadows. Combining the high front lights and low footlights will usually solve my issues as a lighting technician while keeping presenters happy.

As with all lighting in any venue, using a combination of lighting positions is the best method for achieving natural, realistic lighting. It can be achieved in situations with low ceilings, but I have found that the consideration of eye comfort of those on stage, as well as congregants, takes a more prominent role in decision making.

## Fixture features to consider

In addition to careful selection of lighting positions, it is also important to look carefully at the features of any lighting fixture selected for use. It may be that some of the more common fixtures available on the market aren't the right tool for your specific situation and it is more important to invest in the right tools than it is to have the latest fixture or what everyone else has. The following features are some of the most common things that I look for in these situations.

The first specification that I look at is the beam angle of the fixture. If you are working in a facility with low ceilings,

### Chauvet Professional Ovation E-260 ellipsoidal LED fixture

there would be very few reasons you would be looking at fixtures with narrow beams. If I am considering conventional theatrical fixtures, I will most certainly look at Fresnel-style fixtures first. These fixtures are wide beam wash lights that in short-throw situations are some of my standards. If I am looking at an ellipsoidal-type fixture, I will look for a fixture with at least a 36° lens. But, of course, it all depends on the specifics of your facility. There are also quite a few LED strip-style lights available that use a number of light sources installed in a bar-type fixture. These often provide an overall wide beam of light that can work well in these situations.

Another thing that I look for is what type of light source the fixture uses. In low-ceiling situations, chances are the throw of the fixture is short, so building a rig of 750W fixtures would be overkill and you'd end up running the lamps well under full intensity. Not only would the brightness be too much, but the heat produced by high wattage lamps would be uncomfortable. I personally would recommend going the route of an LED light source in these situations. There are many

The flexibility gained by being able to mix colours without hanging large quantities of fixtures for each desired wash, or having to scroll through a palette of gels strung together, is indispensable. When working in spaces with low ceilings, chances are that you are also working with a relatively small space, so it is often better to specify a smaller rig with more flexibility than a larger rig.

The last feature that I try to be mindful of when looking at fixtures for facilities with low ceilings is the noise generated by the fixtures. Automated lights, LEDs and other fixtures with circuit boards and additional processing parts will often



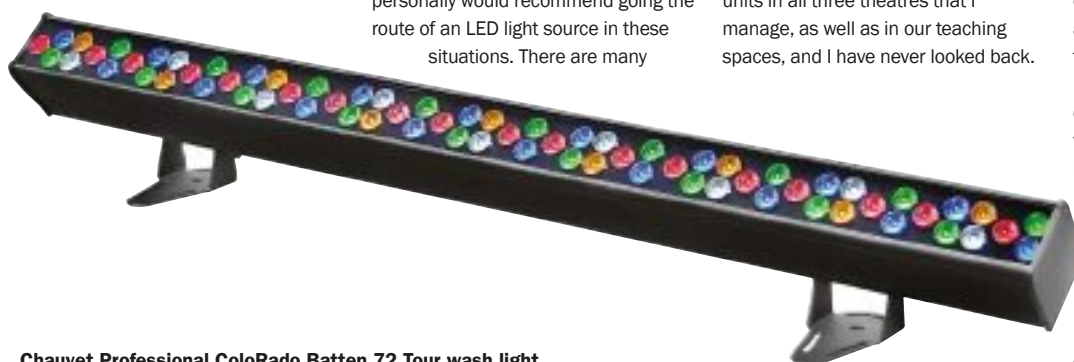
### Elation Professional WW Profile HP ellipsoidal fixture

good conventional lighting fixtures on the market that are LED driven. Not only will these fixtures provide enough brightness in a short-throw setting, but they will produce considerably less heat, besides the cost savings on your electricity bill as well.

Speaking of LEDs, I also look for fixtures that will be able to serve multiple purposes. LED wash fixtures are very common in many settings today. I utilise large rigs of LED wash units in all three theatres that I manage, as well as in our teaching spaces, and I have never looked back.

have a number of fans installed to direct generated heat out of the fixture efficiently. Having low ceilings also means that noise from equipment has a much shorter distance to travel to people's ears. There is nothing more annoying than being in a space and hearing the whirring of dozens, or hundreds, of little fans competing with both the programme audio and with those talking around me. It is important, though not immediately obvious, to think about this as it can affect the congregation's experience in the space.

Though there are definitely some challenges, it is possible to create very effective and creative lighting in facilities with short ceilings. After all, there is no perfect facility (that I have come across anyway). With thousands of products on the market, ensure that you have the right tools for the job, a creative spirit and you will be able to achieve spectacular results.



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