



Recursive Digital: Cove lighting washing a ceiling (RSA, London).

Bright ideas in AV lighting

Lighting forms a central and vital part of many AV projects – and a strategic approach to lighting specification is a major component of successful installations in venues.

Abigail Williams looks at the key steps in specifying lighting for AV installations.

Ranging from stadiums, sports halls, theatre, performance venues and cinemas, to museums and heritage sites, corporate and retail environments; lighting forms a central and vital part of many AV projects. So, where exactly should lighting sit in the AV-environmental mix? And what are the key steps in the process of specifying lighting for AV installations?

Mixing it up

According to Miguel Aguado, marketing and technology manager at Lutron Electronics, it is “impossible” to have a good AV experience without taking into account light, both natural and electric. In view of the fact that many people now work in hybrid environments, where some people are in person and some are remote, he also believes that “offering the right condition for productive collaboration is more important than ever.”

“Furthermore, the building regulations require the use of lighting controls to help optimise the building energy usage, but with today’s lighting control systems, we can not only comply with the regulations, but provide the right visual environment to enhance productivity during meetings and presentations, or elevate the learning experience in the classroom or lecture theatre,” he says.

“Plus, soaring energy costs have crystallised the urgent need for businesses to put energy efficiency at the top of their agenda. For businesses seeking to implement cost-saving strategies, lighting is a smart place to start. Saving energy does not mean we need to sacrifice benefits such as productivity and comfort. To create the right environment for video conferencing, a key consideration in the age of hybrid working, considering audio, video, and lighting holistically is more important than ever,” he adds.

Elsewhere, Emma Bigg, AV designer and strategist at Octavius RE, argues that too many people separate lighting from AV. “It is a very different discipline, but lighting has such an impact on the environment you create that it should be considered a critical part of the AV ecosystem, and how all the families of technology work together to create the best result for the application,” she says.

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△ The British Music Experience: Interactive exhibits, artefacts and memorabilia tracing the history of British rock and pop music.

Last to the party

Meanwhile, Paul Marshall, senior technology consultant at Recursive Digital observes that, for many years, he and his colleagues have been "surprised that lighting and control exists so separately from the AV environment."

"As we all know to our cost, AV is usually one of the last to the party. The lighting and control will often have been designed, specified, and even procured before the AV team are aware of the project, but in an ideal world where lighting directly affects AV, such as meeting rooms, auditoriums, and immersive experiences, the AV team should either be entirely responsible for, or as a minimum have design input by helping to specify lighting control, fittings specification and scene or lighting levels," he says.

All too often, Marshall points out that scenes get set to default settings, as "few appreciate the implications of leaving the scenes set to 'all-on, 75 per cent, 50 per cent, 25 per cent, and off,' by which time the lighting company has finished on the project and will require the client to pay for an additional re-commissioning visit."

"Another common issue is that the control systems can be very basic, making meaningful integration difficult, especially without two-way communication between the lighting and AV systems. If this were all wrapped up in AV, the final user experience would be much sweeter," he says.

For Adam Bassett of Woodroffe Bassett Design, lighting should be considered as "a highly integrated component, one which sits unobtrusively within the environment it serves."

"These opportunities exist only when the integration of AV systems is considered as a functional component of the physicality of the space rather than an overlay. Additionally, lighting should not be seated in isolation from audio or visual systems, but considered in a holistic manner,

each designed in support of the other," he says.

In addition, leading lighting designer, David Atkinson believes that lighting is particularly important in "adding a further layer to the AV environment, as well as in helping to create an immersive quality."

"For example, the recent 'Platinum Concert at The Palace' celebrating our late Queen's reign was a good example of how AV and lighting can work so well side-by-side in creating an immersive experience for the concert goers and TV audiences," he says.

Key steps

For Bigg, an important initial step when considering lighting is to "understand the ergonomic needs of the space and then how the lighting system will work as part of the AV solution." Much like aural and visual senses, she observes that light can be "very powerful" in creating atmosphere, so in a meeting space "you need to think about the needs of the space in a down moment, and how that

might look and feel, but also cater for the needs of a busy room with critical light sources, like a projector or LED wall that will interact with the lighting."

"Filming is now a much more prevalent element of a presentation, live streaming or video conferencing, so you have to consider the light levels required to ensure a good quality shot versus being able to see the content. So, it does need some serious thought and an integrated approach," she says.

In essence, Bigg points out that the key steps are: identifying all the requirements of the space for lighting and identifying the essential interactions between the lighting solution and AV systems – as well as "bringing together designers and consultants in relevant disciplines to coordinate those requirements, especially the control side." Other key steps include coordinating the designs and workflow for all scenarios to ensure all requirements have been properly captured, and reviewing solutions with clients and relevant stakeholders for sign off.

To achieve the perfect light within AV installations, Aguado believes "one must appreciate the unique requirements of each space," and observes that we all, even if intuitively, understand that workspaces "need bright light to help with focus, while a restaurant or entertaining space needs a softer, more forgiving lighting scheme."

"In very simple terms, lighting function tends to be driven by quantity and power. When considering AV installations, you must ensure you have the right number of light sources and completely dimmable capabilities. This will provide the perfect level of lighting control and flexibility necessary to meet any function," he says.

"Integration is also a key aspect. This can truly unlock all the benefits that great lighting control combined with other AV systems has to offer

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△ Theatrical lighting effects to create immersive environments (The Vaults, London).

beyond energy savings. Avoiding glare on the screens thanks to smart lighting and automated shading delivers immediate benefits when it comes to comfort, that quickly translate into productivity gains. Equally, transforming a meeting room into a video conferencing space can be realised by simply connecting a smart device to the AV equipment," he adds.

Wow factor

Meanwhile, Brandon Creel, partner at Hewshott International observes that lighting types and placement are critical elements to consider, closely followed by "consistent colour temperature and brightness."

"Lighting control is another crucial piece. The goal is to put light where it is needed, and limit where it is not. We view controls in a two-step approach. There is a plethora of accessories for lighting fixtures, including glare shields, louvres, reflectors, and trim rings. And on the control system side, we must be able to dim the fixtures to the ideal levels, store the settings, and be able to recall them precisely. Don't forget about windows - various types of shades can be used and even colour correction or light reducing films," he says.

"The user experience inside, and outside, the

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**Brandon Creel,
Hewshott International**

room must be positive. Often, there are more participants or viewers outside the room, than inside. Everyone must be able to hear and see," he adds.

Ultimately, Marshall highlights the fact that people are "beginning to realise that good acoustics is important in these AV intensive environments, and perhaps lighting is next on the agenda."

In his experience, it is particularly important to have control over, or be able to easily influence, the lighting design within any AV space or immersive experiences. Without proper coordination and consideration, he argues that the result "can be akin to walking into a cinema or nightclub with all the lights on, completely ruining the effect."

"Colour temperature of lighting is also key to ensuring the correct effect is achieved. Too cold, and the spaces can look clinical or unwelcoming, too warm and cameras make everything look yellow. Achieving the right white level is a tricky balancing act and like audio can be a little subjective in the eyes of the user," he says.

Marshall reveals that Recursive has also been working with specialist software applications such as Unreal Engine and Dialux to create 3D models of spaces using IES light profiles - a text file that describes the intensity of a light source at points on a spherical grid similar to an acoustic polar plot.

"This helps us plan what the space will look like and how it will perform. Visualisation is a key element of making sure the client understands what they are going to get at the end of project," he says.

"Using lighting to create the wow factor also works to great effect and can be lower cost when compared to AV technology," he adds. ■



Lutron's smart lighting and shading technology is used in not only some of the most impressive homes around the world but also iconic venues including St Paul's Cathedral and Wimbledon Centre Court.