



Speaker Location: A Sound Delivery

Listen ... what can you hear? Very rarely will it be silence; there will always be a ticking clock, the rain pouring down, or the clicking of a computer keyboard. Sound is everywhere; we are subjected to it continuously from the moment we wake up until the moment we fall asleep.

The effect of sound is often subliminal and as such, getting the audio right for your venue is a key factor in creating the ambience and mood you want to achieve for your guests. Deliver poor quality, inappropriate sound and people will always complain, get it right and it enhances the décor, service and experience of a venue, and customers will rarely remark.

So how do I deliver quality sound?

Delivering quality sound is down to what you play and how you play it. The most carefully selected play list is useless unless the music is of the right quality, delivered through the correct hardware, which in turn needs to be expertly installed in the right position.

We have spoken about sound quality in other articles; 'A sound decision' http://www.cga-integration.co.uk/downloads/product_information/A%20sound%20decision%20music%20vs%20silence.pdf and 'Using sound to differentiate your spa' http://www.cga-integration.co.uk/downloads/product_information/Using%20Sound%20to%20Differentiate%20Your%20Spa.pdf so here we turn to sound positioning; where should the speakers go and why does this matter?

Getting the positioning right; the proximity effect

Obviously, the closer you are to a speaker, the louder any transmitted audio becomes. However, a well designed sound system can help to balance how sound is delivered throughout a room, to minimise or completely avoid any 'proximity effects'.

Historically sound was delivered through speakers which were screwed onto the outside of walls in a room. Not only was this often unsightly, but as sound was 'squirted' into the room, it remained loud in the immediate proximity of any speakers and quieter in the centre of the room. In addition to this, as the sound waves converged in the centre of the room they worked against each other, and as such the quality of the sound here become 'muddy'; unclear and undefined, creating a less than desirable experience for those in that area.

Specialist sound, light & video systems integrators

CGA Integration Ltd, PO Box 3997, Bracknell, Berkshire, RG42 2ZS

Registered Office: 125 High street, Odiham, Hants, RG29 1LA

phone: 0845 058 4650 fax: 0870 458 1668 e-mail: info@cga-integration.co.uk www.cga-integration.co.uk

VAT No. 851 5407 34 Registered in England and Wales. Company Registration No. 3878843



Ceiling Speakers

At CGA Integration we try, wherever possible, to use ceiling speakers in our designs and installation. This enables us to create a grid of speakers to offer an even coverage of sound throughout a room. As customer's ears are always a constant distance from the ceiling and therefore from the speakers, (no matter how tall they are!), they will receive a consistent sound as they move throughout the room. In addition to this, mounting speakers on the same level within a ceiling gives you the hidden advantage of the speaker cones coupling, which gives greater efficiency and a theoretical large driver area which allows for increased bottom end sound throughout the room.

Speaker design

Although speaker technology as a whole has not evolved greatly in recent years, ceiling speaker design has been refined and it is now possible to generate a good quality, full warm sound from a ceiling speaker, without the need for a separate bass bin. This will satisfy audio needs in most situations, but there are still areas where separate bass bins are required;

'Party Level' Audio

In bars and function rooms which demand 'party level' audio, separate bass bins are still required to deliver the sound level needed in these environments. Bass may be 'omni-directional', but bass bins need to be positioned to generate an even balance of sound throughout a room; otherwise they will generate the same proximity effect as badly positioned wall mounted speakers. Ceiling mounted bass bins are now available which enables the bass to dissipate above the guests rather than be focused in one point at floor level, again minimising 'proximity effects'.

Design led small speakers

Many designers request that we use tiny ceiling speakers which look chic and compact. If this is the case, a ceiling mounted bass bin will also have to be factored into the audio design to ensure a full and warm sound.

Speakers need to be a certain size or diameter to enable all frequencies of sound to be projected into the room at a balanced usable volume. If the size of the speakers is greatly reduced, separate bass bins are required to enable lower frequency sound waves to be amplified and transmitted. Small speakers are great for personal use; one person listening to their headphones hears well balanced audio, but these same speakers can not be used to fill a room with well balanced sound, the result would be a very thin and tinny noise.

Specialist sound, light & video systems integrators

CGA Integration Ltd, PO Box 3997, Bracknell, Berkshire, RG42 2ZS

Registered Office: 125 High street, Odiham, Hants, RG29 1LA

phone: 0845 058 4650 fax: 0870 458 1668 e-mail: info@cga-integration.co.uk www.cga-integration.co.uk

VAT No. 851 5407 34 Registered in England and Wales. Company Registration No. 3878843



'Invisible' speakers

Speakers are now available to deliver sound in challenging areas. CGA has designed and installed sound systems with invisible drive units which deliver quality sound through the following media;

- Plaster in plasterboard ceilings
- Wood panelling in wooden ceilings and walls
- Glass
- Sheet metal.

This enables superior sound to be delivered in areas such as spas, lift cars or highly design lead environments.

Again, due to the specialist nature of these units, separate bass bins will need to be factored into the audio design in these areas to generate a fully balanced audio.

Always start early

If you are refurbishing or building a new area within your venue it is always worth considering your audio needs early on within a project. By factoring audio requirements in at the design stage, the best possible sound system can be designed for you, which will blend seamlessly with the rest of the décor within a room and create the best possible results for you and your guests. With so many factors to consider we would be happy to advice you. For more information or to discuss specific project requirements please contact CGA Integration; Specialist sound, light and video system integrators.

Call CGA Integration Today to discuss your next project

UK: 0845 058 4650

International: +44 (0)1344 456500

or info@cga-integration.co.uk

www.cga-integration.co.uk

Specialist sound, light & video systems integrators

CGA Integration Ltd, PO Box 3997, Bracknell, Berkshire, RG42 2ZS

Registered Office: 125 High street, Odiham, Hants, RG29 1LA

phone: 0845 058 4650 fax: 0870 458 1668 e-mail: info@cga-integration.co.uk www.cga-integration.co.uk

VAT No. 851 5407 34 Registered in England and Wales. Company Registration No. 3878843