

Delivering a fully bespoke acoustic ceiling cloud system

Sound Zero was specified to deliver an acoustic ceiling solution in a converted railway arch-come-Taproom to improve reverberation time and speech intelligibility.

About The Kernel Brewery



Photos: [Max Brook Photography](#)

Alongside a collection of artisan food producers and importers, The Kernel has found itself a home amongst several other independent breweries and taprooms, labelled the **Bermondsey Beer Mile**, that stretch through the streets and railway arches of South London.

With the opening of **The Kernel Taproom Arch 7**, customers can experience a real sense of uniqueness inside the unusually shaped building whilst sampling the delights of one of the UK's best, and most influential, breweries.

Long reverberation time

Due to the building's arched shape and high ceilings, The Kernel Brewery was aware of the potential discomfort that the space's acoustics may bring to their punters.

With a capacity of up to 150 thirsty patrons at a time, it was important to drastically reduce the effects of the customers all talking over each other and fighting to be heard, which can cause an unacceptably noisy environment for both staff and customers alike.

Due to the unconventional nature of the archway, the Sound-Zero team had to design a fully bespoke acoustic system from the ground up. The team worked closely with the brewery management to ensure the finished product was not only effective, but in keeping with the building's aesthetic; not to mention The Kernel Brewery's unique style.

Light as a feather – The solution



A large, suspended structure was proposed in order to tame the long reverberation time inside the archway. This was for two reasons:

- The ceiling span is often the largest and most unobstructed place to mount acoustic treatment that is intended to reduce T20 reverberation time, being both undisturbed by constant furniture changes and out of harm's way, beyond the reach of the public.
- But more importantly, an archway generates an unusual acoustic anomaly. Sound waves are simply air moving in areas of high and low pressure around and within space. *As long as there is air, sound will move around until its energy is spent. We all know the saying "in space, nobody can hear you scream!"*

Curves or arches in this case are great transmitters of waves, hence why a satellite dish uses a large concave bowl in order to focus incoming radio waves. This same efficient transmission behavior can be observed in constructed archways for sound wave energy. The sound waves propagate much easier along curved edges and tend not to diffract as easily as they would along perpendicular/parallel edges.

A great place to observe this effect is the [whispering gallery at St Paul's Cathedral in central London](#).

Because of those reasons, a ceiling mounted system was the clear winner and therefore Sound-Zero needed to get to work tackling the next big issue: size and weight!

The size and weight of the acoustic panel

The entire structure had to cover the length and breadth of the taproom. Spanning four meters across and almost 15 meters long, it had to be big, sturdy and extremely lightweight!

The Sound-Zero design team conjured up a unique array of acoustic panels that would stretch the complete span of the archway, utilising only the lightest manufacturing materials available.

An all-aluminum frame had to be constructed in order to create the framework from which the acoustic panels would be suspended from. The frame was designed and built at the Sound-Zero manufacturing facility alongside all of the melamine acoustic components.

Basotect melamine foam

We used Basotect melamine foam for the absorbent components of the ceiling clouds. Not only is it the lightest acoustic foam available, it also achieves Class 0 flammability rating as well as Class A acoustic performance.

This meant the implementation of the complete acoustic system dropped the arch's T20 reverberation time well into acceptable levels for public spaces, meaning patrons and staff members could enjoy a comfortable and sociable experience.

The results



Photo: [Max Brook Photography](#)

Customer satisfaction was at the heart of this project, delivering a solution that enabled punters to have echo-free conversations whilst enjoying some of the finest beer that London has to offer.

However, the finished result also brought about a unique, eye-catching aesthetic that complimented the brewery's passion for style and innovation.

A bespoke approach enables us, Sound Zero, and the client, to have full creative expression that inevitably leads to results that we can be proud of.

For a bespoke, design-led acoustic treatment that allows your brand to stand out, talk to an expert today.