

# Acoustic Shells

By Jason Flanagan

**S**ited in a sunken garden beside the beach in Littlehampton, West Sussex, UK, these Acoustic Shells act as a stage and shelter for the local community. Designed by Flanagan Lawrence, a London-based architectural practice, the shells were prompted by a desire to reinvigorate Littlehampton with its gentility of the early twentieth century, the shells materially enhance the public open space of the adjacent greensward and satisfy an essential social need that is not provided elsewhere in the area.

The concept for the shells is derived from the notion of a traditional bandstand. Following the Industrial Revolution and worsening conditions in urban areas, bandstands were conceived as a response by local authorities to an increased need for green open spaces where the general public could relax. Following the first bandstand in Britain in the Royal Horticultural Society Gardens

in South Kensington in 1861, bandstands became very popular, and were subsequently installed in parks across the country. Competing with new media in the twentieth century, such as cinema and television, bandstands lost their appeal and fell into disuse.

However, the new world of social media has further democratized the production and distribution of music. No longer the preserve of elite musicians, popular music is again made by anyone, and played anywhere—whether online or in public. The Acoustic Shells are a response to this context, bringing back an old ideal—an architecture that can represent sound and the people that made it.

One shell faces the town and forms the principal bandstand. The acoustic design of the interior creates a reflective surface to project the sound of the performers to the audience in the



*Stage and shelter* (Photo courtesy Flanagan Lawrence)



*Shelter* (Photo courtesy Flanagan Lawrence)

sunken garden. The other shell faces the beach and forms a more intimate structure as a shelter for listening to the sounds of the sea or for entertainers to perform facing the promenade.

The £100,000 budget for the Acoustic Shells prohibited the form of a more traditional bandstand: a large elevated platform, open sides, and an acoustically reflective soffit and roof. This project chose to unify the architectural components of the brief—floor, walls, structure, roof—into a single entity that would reduce materials, complexity, and cost. A traditional timber structure



*Stage* (Photo courtesy Flanagan Lawrence)



*Shelter* (Photo courtesy Flanagan Lawrence)



*Shelter* (Photo courtesy Flanagan Lawrence)



*Detail* (Photo courtesy Flanagan Lawrence)

was ruled out due to the harsh marine environment and the threat of anti-social behavior such as graffiti and arson. It was decided that a robust material was required that could withstand all possible eventualities. Concrete was chosen as a material that could be dense enough to meet an acoustic brief and be robust enough to be a match for the environmental conditions.

An all-concrete structure had its own problems and would have to use innovative construction techniques to limit the wastage inherent in shuttering and forming processes. Research was undertaken in the development of thin shell structures. These can be self-supporting and have structure integrated into the form of the shell. The most efficient technique that would suit was that of sprayed concrete. With care, this process can produce the complexity required by the Acoustic

Shells project, and be carried out in a short time frame, thus reducing the site costs further.

The project was built in two distinct stages: the construction of the shells by the Shotcrete Group, the specialist sprayed concrete contractor, followed by the integration into the landscaping, which was by Landbuild.

The development of the scheme in three dimensions was very complex and involved considerable input from the contractor. After having developed the form of the building in specialized software, a digital model of the scheme was handed to the Shotcrete Group to drive the development the form. Following the ordering and delivery of the reinforcement bars, a grid of scaffolding 3.3 x 3.3 x 3.3 ft (1 x 1 x 1 m) was set up on the site. A corresponding digital version was set up in the architect's office. Points were taken on the digital model where the form of the shells touched the grid. These were then marked on the scaffold. These points were then checked by digital survey and sent back to the model in the office for review. Once all parties were content with the spatial coordinates, the reinforcing bar mesh could be assembled within the constraints of the marked scaffold, with the confidence that the form of the shells will conform exactly to the shape and specification of the digital version.

Following the reinforcing bar assembly, an expanded metal mesh was threaded into the structure. This acted as stay-in-place formwork and enabled the spraying process to take place from both sides. The thickness of the shell was on average 4 in. (100 mm), with the leading edge thickening to 6 in. (150 mm) for structural stability.

Once sprayed, the structure was hand-finished with metal trowels, creating a perfectly smooth finish. This was then painted and given an anti-graffiti seal.

Since the project's completion in April 2014, the Acoustic Shells have gone on to become a celebrated local landmark for the Littlehampton community. Available for event hire through the local town council, the stage and shelter are also used on a daily basis for play and rest by passers-by. On a wider scale, the project has



*Stage* (Photo courtesy Flanagan Lawrence)



*Stage* (Photo courtesy Flanagan Lawrence)



Stage and shelter (Photo courtesy Flanagan Lawrence)

received global recognition, having been short-listed for two World Architecture Festival awards and winning the practice the BD Award for Small Project Architect of the Year 2014.

## About the Company

Flanagan Lawrence is an award-winning, design-led architectural practice based in London. The practice has an impressive collective expertise across a broad range of sectors and building typology, including large-scale commercial projects and high-end residential schemes, as well as cultural, hotel and leisure, education, infrastructure, logistics, business parks, and major master planning projects both in the United Kingdom and internationally.

Flanagan Lawrence has worked with a diverse body of clients in both the private and public sectors. Private clients include ASK Property, Athos, BAA Lynton, British Land, Brookfield Europe, Candy & Candy, Chelsfield, Development Securities, Espalier, Finchatton, Grainger, Great Portland Estates, Grosvenor, Herby Holdings, Land Securities, Londonewcastle, Muse Developments, Quintain Estates and Developments, Segro, and the Sellar Property Group.

Public sector work has included performance and office spaces, as well as regeneration schemes. Clients have included the Royal Welsh College of Music & Drama, Live Theatre, River-

side Studios, Sadler's Wells Theatre Trust, Soundforms plc, The Sage Gateshead, as well as Imperial College, Oxford, Manchester City Council, and Littlehampton Council.

Visit [www.flanaganlawrence.com](http://www.flanaganlawrence.com).

## The Outstanding International Project

*Project Name*  
Acoustic Shells

*Project Location*  
Littlehampton, West Sussex, UK

*Shotcrete Contractor*  
Shotcrete Group UK

*General Contractor*  
Shotcrete Group UK

*Architect/Engineer*  
Flanagan Lawrence (Architect)  
Expedition (Engineer)

*Material Supplier/Manufacturer*  
Shotcrete Group UK

*Project Owner*  
Littlehampton Town Council/  
Arun District Council

\*Corporate Member of the  
American Shotcrete Association



*"The one thing that unifies our approach is the search for clarity. We are very analytical and don't bring pre-conceived ideas to the table. We get chosen because we bring freshness and innovation to the process. The overriding unifying feature is the search for the clear, elegant solution."* As Design Director, **Jason Flanagan** has been involved in all of Flanagan Lawrence's residential projects. These vary from a residentially led mixed-use scheme in Southwark including private apartments, affordable housing, and a homeless shelter; to individual houses in a village in Cornwall; to high-end residential projects for Candy and Candy, Sellar, and the Grosvenor Estate in London. Flanagan also has an extensive track record of working on public buildings for the performing arts, leading the team on the newly completed, competition-winning scheme for the Royal Welsh

College of Music & Drama in Cardiff comprising a concert hall, theatre, and gallery space. Flanagan studied architecture at the Bartlett School of Architecture at London University and at the Royal College of Art. During his studies, he worked for Conran Roche Ltd and Armstrong Associates. He joined Foster + Partners in 1991 and was made Partner at Foster + Partners in 2004. Flanagan joined Flanagan Lawrence in 2006 and has a special interest in acoustics and sound. Amongst his most innovative projects is Soundforms, the first ever mobile acoustic shell with the capacity for a full orchestra.