In late 2014 we were approached by the custodians of the church of St. James, Spanish Place in Marylebone, London.

It was explained to us that the congregation were not experiencing satisfactory reinforcement from the installed sound system and at the same time that it would be desirable to add more microphones; there were also serious concerns regarding the effectiveness of the induction loop system.

The church of St. James is a large, historic and architecturally sensitive building whilst remaining as acoustically challenging as one would and should anticipate.

When surveying the troublesome system we found that it benefited from a large number of old Philips column type passive loudspeakers which are known to offer useful directivity characteristics that, many years previously, had been correctly situated to provide reasonably smooth audio coverage for the congregation seating area; so far so good.

However, at some point in more recent history; the front end of the system had been changed to a number of components which were both incompatible with the loudspeakers and inadequate for the demands of such a large church; there was also a single radio microphone dating back to the 1990s that was operating on a long defunct frequency that was, therefore, exposed to external interference.

A test was carried out using a calibrated signal strength meter and it was revealed that the induction loop system for the hard of hearing was emitting high levels of noise and not a lot of audio.

Procedure
It was made clear to us at the outset that budget was going to be an issue and so taking this into account our approach was to try to make use of any good items and to offer a proposal made up of a number of separate quotations for separate elements so that the client would be able to both prioritise the works and to test our solution by moving forward in small steps.

Option One was to install a new radio microphone system operating on the current Channel 38 and to repair some broken cables which were preventing some of the wired microphones from working.

Option Two - When phase one was found to have been successful we were offered the opportunity to produce a design for a new induction loop system which would be carried out using the Univox computer aided design system enabling us to accurately predict compliance with BS60118-4.

Due to the very large floor plan of the church our induction loop design was formed of one loop of large gauge cable in a figure of 8 configuration surrounding the congregation and a second loop surrounding the sanctuary; separate induction loop drivers were specified for each loop and for most of the installation we were able to secret the cables inside containment in the old heating ducts under the floor.

Option Three – From an audio enthusiast's perspective the last phase was particularly satisfying as this involved improving the sound to the congregation by more correctly driving the existing Philips column speakers.

The old set up had included a twenty plus year old Crest amplifier offering 300watts per channel but operating at low impedance; clearly incorrectly specified, resulting in very low levels of sound progressively to the rear of the church due to the substantial losses along the speaker lines.

Our solution was to install a new microphone mixer, graphic equaliser and crucially, large impedance matching transformers to ensure correct compatibility with the still good Crest amplifier and the existing loudspeakers.

This was all built into an equipment rack located in the church basement and fed by a dedicated, sequenced and suitably protected mains power feed.

The system, now correctly calibrated using Smaart computerised analysis equipment is at last able to deliver the required same levels of reinforced speech and gain before feedback into the congregation that is essential in a busy church situated on 'The Way of St. James'

Following successful testing and re-commissioning of the re-built system Fr. Christopher Colven kindly offered us the following comments:-

"I was pleased with the initial analysis provided by Sound Systems UK and I found my every contact with them to be professional at the highest level. The proposed work was carried out speedily with a minimum of disruption to the liturgical life of the parish, and has resulted in a dramatic improvement in the quality of sound relayed throughout our extensive building. I would have no hesitation in commending this company to other churches".