

A SPACE FOR MUSIC

Douglas Galbraith

Some music lends itself to open spaces. The carrying sound of the bagpipe, so effective in rallying stragglers in battle, echoes more harshly inside a building. The powerful, unmeasured sounds of the 'holler', expressive of the loneliness and loss of the enslaved cotton harvester, only 'came indoors' when it met the regular and repeatable form of the missionary hymn and became the music we call jazz. The extravagant compositions of Gottschalk, which he would play on a grand piano perched on an outcrop of rock over a valley, defiantly contesting with the elements, are rarely if ever heard in the concert hall.

Church music, on the other hand, thrives in the more confined spaces of the sanctuary. With the attention thus focused, the hearer can appreciate the form of the music, so that the detail of the interweave of counterpoint and the mellifluousness of moving harmonies may draw the mind of the worshipper in the direction of beauty, of truth, of the divine.

Sometimes the nature of this space has brought about the very shape of the music - the choirs and brass consorts of a Monteverdi or Gabrieli answering each other from gallery to gallery, the chant which was necessary to carry the psalm throughout the large mediaeval church, the flowering of shoulder-to-shoulder hymnody which all sang with one vigorous voice in the smaller and more intimate space of the dissenting meeting house. 'Limitation need not be oppressive. To recognise what cannot be achieved within given boundaries is also to see what can'.¹

Music is not only *heard*, it is *made*. The quality of the music is affected both by the acoustics of a building and by how the music makers, including the congregation, are disposed.

Acoustical considerations

A building is almost an instrument in itself, allowing the sound to be heard in a particular way, and having a final say in its quality. Dimensions are not the only consideration. In a large cathedral the plucking of a solo guitar can be as telling as the clashing of trumpets. Both sounds will take some of their character from the environment.

It goes without saying that the shape of the building has its effect - whether it is a simple box, whether it contains transepts, side chapels, aisles or alcoves, whether the ceiling is high or low, ornate or plain. Sound waves strike the surfaces, being absorbed or rebounding to hit other surfaces. Generally speaking, the harder and flatter the surface, the more reflective it will be to sound. Marble, for example, reflects sound waves well, whereas a wooden floor or pews will tend to absorb it. There is also the wild card of the effect of the assembled people, since bodies and clothing can 'soak up' sound.

The term reverberation is applied to this factor - how far sound is 'repeated' or 'bodied' by the nature of the building. In a traditional building, reverberation time is often fairly long. Sound travels slowly compared to light and takes time to reach round a building. This, coupled with the materials encountered, makes for a variety of result and affects timbre, volume and the clarity with which details are heard. A building can have too much echo, particularly when surfaces are hard, threatening both the clarity of the music but also the audibility of the spoken voice. In another situation, where there is a gentler 'return' of sound, the beauty of the music seems much enhanced. The 'long' acoustic of the Lady Chapel in Ely Cathedral, where there is a six-second reverberation, particularly favours an *a capella* sound, as in Robert Carver's ten part Mass, where harmonic change is slow. Such a building also will beautify plainsong, colouring its single line and nudging it with notes that precede and follow to make a sound more complex than on the page. Such a long resonant acoustic, however, although perfect for Gregorian chant, could cause certain instruments or combinations of instruments - such as those used in rock music - to sound jumbled and unpleasant.

In these matters, we are not concerned only with the raw state of the building, but the way it is furnished. Today's (surely welcome) trend towards increasing the hospitality of our buildings can also endanger a building's effectiveness by dampening and dulling down the music that is made. The more the sanctuary approaches the seminar room, with well upholstered chairs and wall-to-wall carpetting, not only does the sound of choir and instrument become more 'enclosed' but the individual singer in the congregation feels more isolated and unwilling to sing.

A degree of reverberation, therefore, is desirable but not so much as to render the speaking voice less audible, which is not well served by large, resonant buildings. Sir Christopher Wren would always insist that the average preacher could not expect to be intelligible farther than about 50 feet in front of him, 30 feet to either side, and 20 feet behind. William Allen points out that it is the high pitched content of speech which provides most of the intelligibility. Higher frequencies go more 'in a straight line' because their short wave length causes more exact distribution. For example, as he comments: 'Women's voices being pitched higher than men's are particularly directional and ... more easily shadowed ... by piers or large items of church furniture'.²

The closer the path of the sound to the heads of the congregation, the more rapid is the loss of intelligibility. A good guide is whether everyone can see the face of the speaker. It is often forgotten, in the increasing number of proposals to replace with a simpler lectern a pulpit seen as symbolising a certain type of outmoded authority, that a principal reason for placing the preacher 'six feet above contradiction' was that he simply be seen and heard. A sounding board over the pulpit often assisted this by preventing the sound from being lost in the roof space. Even today, when amplification is believed to ensure audibility for all, we are told that even sighted people subconsciously lip-read to back up what they are hearing. This argues for good light on the preacher - the practice of putting out all the lights in the church save for the one in the pulpit, often maligned as 'settling the congregation down' for a 'performance', turns out to make perfect sense!

The location of the music-makers

Questions about the placing of the people are not concerned only with musical audibility. Of prime importance is the purpose of their gathering and of how they relate to each other. Music is part of the currency of this event. A building can inhibit the formation of the community or it may contribute to its building up. 'Far too many buildings for worship today, re-ordered or new, do more to suppress the song of the gathering than to support it'.³

In the case of the *congregation*, when there is often not much choice as to where its members sit, sometimes there are musical disadvantages which can be corrected. What makes people want to sing is that they feel safe to do so, feeling a part of the singing body or assisted by the acoustic (a reason why many who would be reticent about singing in other contexts feel able to do so in the bath!) A scattered congregation does not help and steps may need to be taken to gather the people closer together. It may be possible, also, to create a better acoustic by the use of movable screens, of little more than head height in glass or wood, which more closely define the space, reflect sound, and help singers feel less isolated and discouraged. It has even been attempted, with some success, to pick up the congregation's sound by microphone and reflect it back by loudspeaker.⁴ The disadvantages of carpeting in this regard has already been referred to.

Where the *choir* sit, again, is not simply a matter of audibility but follows decisions as to how its relationship with the gathered people is understood. In the immediate post Reformation period seats were provided for 'the maister of the sang schuil and his bairnis' in the area round the pulpit. Earlier, in monastic establishments and in cathedrals, monks or members of choirs faced each other across the space in front of the high altar. The high backed pews and the wooden walls of the 'choir' would help the singers hear each other and make for a better ensemble. This arrangement particularly favoured the antiphonal style of singing when two halves of the choir, or the choir and a cantor, 'answered' each other. In more recent times in branches of the Reformed

church in Scotland, the choir has kept this place at the front of the church, often facing across the platform but just as often meeting the congregation's eye. In some situations, where it is argued that it is more important that the choir be heard than seen, it is sited behind the congregation, most often in a gallery. Where the organ console is in the gallery, this arrangement makes for better contact with the conductor/organist, assuming they are one and the same person.

A choir may have two functions. First, it can make music that requires extra skills or developed voices. The more challenging music that results not only makes more complete the human offering but can enable the spiritual growth of singer and listener. For this, visibility may not be essential (at a cathedral Evensong the choir may be behind the screen and the congregation in the nave), but it may help. Typically in parish churches, the choir will contribute an introit or anthem. In situations where it is placed in front, facing the congregation, there is always the danger that an anthem be seen, not as part of the 'flow' of worship (some churches in Scotland used to provide words-only anthem books for the whole congregation), but as a 'performance'. This misunderstanding is not helped in many instances by the way the minister may announce the item and thank the choir at the end.

Second, the choir enables the congregation to deepen its own musical expression by interacting with it, either in enriching the sound of the whole singing body or by providing 'cues' to which the people respond. Increasingly, for example, congregations are being asked to join in music other than hymns, like short settings of liturgical texts (*Glorias* etc.) and of the Communion service. These are often in antiphonal forms, when choir, cantor and congregation have to attend closely to each other. For this, visibility and proximity are important.

The visibility of the choir is desirable also when vestments are worn and where the total effect can help people worship. Nor is music always 'static'. Musical processions can add a great deal to the movement of worship. Planning the space may mean providing enough room of the right length, either through the middle or round the perimeter.

There may, then, be no single right placing for a choir. It may be different on different occasions and situations. It is increasingly common to find an English cathedral choir brought out from behind the screen for services, e.g. of Holy Communion, where there is emphasis on the community of worshippers gathered round the table. It would be possible to consider on occasion the strategic placing of the choir within the body of the congregation. One intriguing choir 'position' is on Palm Sunday at Wells Cathedral. There the second layer from the bottom of the five layers of statuary which forms the west face consists of angels, but amongst them are 'singing holes'. On that Sunday, a group outside begin the *Laude*, to be answered by singers from within the building, in a gallery, giving the stone angels their voice.

There is much interest today in the use of *instruments* other than the organ. With the formation of instrumental groups or 'praise bands', alterations are sometimes necessary to the chancel/platform. Consideration should be given to the placing of such a group to one side rather than in the centre. The space should be planned to prevent disruption or delay in the progress of the service, the musicians suitably situated when they are not playing and able to move into place smoothly, quickly and quietly. Room will be required for music stands and space enough provided for each instrument (a string player needs elbow room, a 'cello needs considerable floor space, a trombone has a long reach). They need to sit so that all can see conductor or, if none, each other. They also need to be so placed that they can hear each other well. A screen for song words (if this is desired) should similarly be carefully placed and able to be folded out of sight.

The siting of the *organ chamber* should be carefully considered. This can be a work of art in itself (as in Douglas Laird's design for the organ case in St. Giles' Cathedral, Edinburgh) but it may not be appropriate that it be so placed that the organ pipes are the main focus of people's attention. It is desirable that the organist should hear the instrument, as far as possible, as the choir and congregation do, and be able also to hear the congregation as it sings, so that he/she can judge the weight and the tempo of the accompaniment. It goes without saying that the

organist should be able to see the choir, or the conductor (often in such a case a closed-circuit television system is provided). The position of the organ will also affect how it is heard. Recesses and chambers can confine the sound (although leaving plenty of room at the top helps) and if round a corner 'out of the way' will 'speak' in the wrong direction.

Electronic or *digital organs* bring their own challenges. Some carry their own single speakers within them but it is usually the case that, if they are to be heard at their best, speakers in other parts of the building are necessary also. This is because, whereas a pipe organ provides sound which originates in a diffuse way over the extent of the organ chamber, the electronic or digital alternative has to use more than one speaker to create the traditional feeling of the organ sound coming from 'all around'. Unfortunately, speakers generally need to be more numerous and better placed than is normally possible if the instrument is to be able to live up to the manufacturers' claims. The appropriate siting of speakers can be a sensitive matter in a fine building.

Many congregations are becoming aware that their buildings provide excellent venues for concerts and similar public events, and where upkeep costs are high a congregation may wish to develop this facility. They will wish to ensure that the conditions are such as an orchestra, say, might expect to find in a concert hall. Thus, a chancel/platform may be extended and more flexible seating provided for the audience. However, in seeking to achieve this, the danger of a full-breadth platform creating a no-man's-land between pulpit/table and congregation should be borne in mind. Even in a long church, side-facing pews maintained the feeling of people gathered round Word and Sacrament. In very tall churches, certain orchestral instruments, such as woodwind and strings, will lose balance in relation to brass and percussion, and where the platform is too low the audibility of these instruments, with their high harmonics, will suffer. Sometimes carefully placed microphones and speakers can make up for the difficulties of the building.

Conclusion

These last few decades have seen many interesting developments in church music. The quality of composition in music for choirs is as good as at the best times in previous history. A 'new song' has been put in the mouths of congregations as the faith of the church engages with the peculiar challenges of contemporary life. Particular attention is being paid to wider musical participation in the liturgy. In all of this, new relationships are building between the different groups who contribute to the church's music and new challenges and opportunities being explored. While remembering that church music is, at base, concerned with *inner space*, with the making room for the Holy Spirit in the hearts of people, when re-ordering or planning new buildings it is surely important at this time to bring all our creativity to bear on the nature of the space in which the distant but approaching sounds of the new creation may be heard.

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- 1 James Whitbourn, *In tuneful accord* (SPCK 1996).
 - 2 William Allen, *Acoustic Treatment for Places of Worship*, Ecclesiastical Architects' and Surveyors' Association, 1984.
 - 3 John Rowntree 'Sound in the Church', *Church Building* No. 39, May/June 1996, pp.13-14.
 - 4 Allen, *ibid*.

