

## Internal sound management in All Saints tower

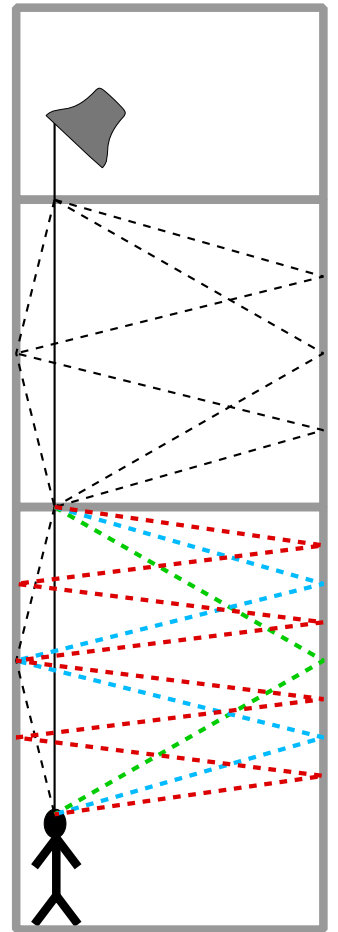
Like any musicians, ringers need to listen carefully to the sound they make to ensure it is accurate, and to do this they need to be able to hear when individual bells strike.

One of the attractive features of English style tower bell ringing is that the individual sounds overlap and merge into a rich continuous whole because each bell reverberates long after it strikes.

Inside the tower the reverberation is magnified by internal reflections from the tower walls, which can make it hard for the ringers to pick out accurately the sound of individual strike notes.



In 2005 the ringers hung old carpets on the walls of the clock room to reduce the internal reverberation and enhance the clarity of the bells as heard by the ringers below. This simple, cheap treatment proved very effective.



When the glass screen was installed in the ringing room it replaced a perfect sound absorber (the open arch) with a perfect reflector. On its own that would have made the internal reverberation far worse.

To compensate for the reflectivity of the glass, two large areas of bare wall (which were reflective) were covered with heavy drapes of acoustically absorbent material (of a type used in theatres) that provided roughly the same absorption as was lost from the open arch.

