

# Akustik Arsitektural Gereja. Studi Kasus: Perbandingan Akustik Antara Katedral Santa Maria Pelindung Diangkat ke Surga dan Gereja Immanuel. = Architectural Acoustics of Church. Study Case: Acoustics Comparison Between St. Mary of The Assumption Cathedral and St. Emmanuel Church.

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## Abstrak

Gereja digunakan sebagai tempat ibadah bagi komunitas Kristen & Katolik, di mana kegiatan seperti berkhotbah, berdoa dan menyanyi berlangsung. Akustik dalam arsitektur itu penting karena kegiatan yang dilakukan di dalam gereja di antara komunitas-komunitas besar. Skripsi ini akan didasarkan pada dua gereja yaitu Katedral dan Gereja St. Immanuel, Jakarta Pusat dimana pemeriksaan dan studi struktur interior akan dilakukan untuk memahami pekerjaan akustik di dalamnya. Pengaturan dan bagaimana ruangnya, juga memainkan peran penting karena dapat memengaruhi gelombang suara. Analisis bagaimana ruang interior bulat dan persegi panjang serta posisi kursi akan dilakukan, untuk memahami bagaimana suara menyebar di dalam ruangan. Bahan bangunan juga penting karena memainkan peran penting baik sebagai reflektor, penyerap atau resonator yang mempengaruhi kekuatan, frekuensi dan gema suara di dalam. Ini penting karena suara yang dianggap sudah volume maksimum dapat merusak telinga manusia dan juga bisa menjadi polusi suara bagi orang lain yang tidak ada di dalam gereja. Sebaliknya, kebisingan dari luar bisa menjadi gangguan bagi orang yang di dalam Gereja sehingga analisis tentang bagaimana bangunan membatasinya dari itu akan dilakukan juga. Penelitian ini bertujuan untuk membandingkan kualitas akustik kedua Gereja yang dipilih untuk memahami bagaimana perbedaan dimensi, bentuk dan bahan mempengaruhi akustiknya. Dengan demikian akustik gereja penting karena memiliki korelasi yang kuat dengan kegiatan yang dilakukan di dalamnya.

.....Church is used as a place of worship for the Christian and Catholic community, where activities such as preaching, praying and singing takes place in. The architectural acoustics is important due to the activities done inside the church among the big community. This paper will be based on two churches which are the Cathedral and St. Emmanuel Church, Central Jakarta where examination and studies of the interior structure will be done to understand the work of acoustics within. Arrangements and how the space is, also plays an important role as it might affect the sound-wave. Analyzing how the round and rectangular interior space as well as the seat positioning will be done, to understand how the sound spread within the room. Materials of the building is also important as it plays an important role as either reflectors, absorbent or resonators which effect the strength, frequency and reverberation of the sound inside. This is important because sound that is seen as the maximum volume can destruct the human's ears and could even end up being a noise pollution for others that are not inside the church. The other way around too, noise from outside could be a disturbance for the people inside the Church so analysis on how the building confine itself away from it will be done too. This paper aims to compare the acoustics quality of the two chosen Churches to understand how the difference in dimension, form and materials effects the acoustics. Thus the acoustics of the church is important as it has a strong correlation with the activities that is done within. Church is used as a place of worship for the Christian and Catholic community, where activities such as preaching, praying and singing

takes place in. The architectural acoustics is important due to the activities done inside the church among the big community. This paper will be based on two churches which are the Cathedral and St. Emmanuel Church, Central Jakarta where examination and studies of the interior structure will be done to understand the work of acoustics within.