Acoustic Considerations that promote Office Collaboration
Major shifts in the global corporate working patterns have taken place in the last fifteen months of the pandemic. The traditional working patterns were disrupted. Remote work, virtual calls and digital nomads have been, are and will be the new trends for office-based employees and corporations. Nevertheless, studies inform us that traditional working patterns for a substantial percentage of the corporate work force are far from over. The employee interaction and collaboration during one’s daily shift is highly important to maintain productivity.

Greater focus, better communication between employees, privacy and improved productivity levels can be achieved through a good acoustic design in an open plan office. Acoustics, especially in open plan offices, is critical during the design or retrofitting works. “Good acoustics” enables people to collaborate, stay active, pleased with the interior office conditions and achieve greater results whilst preserving and improving their health and mental well-being.

Typically there are a number of acoustics design factors that should be considered when aiming to create a pleasant working environment. Parameters such as people distractions, sound reflections, external noise intrusions and operable building services noise emissions can lead to “bad acoustics” within an office. This blog focusses on two topics i.e. sound absorption and speech intelligibility.

A critical challenge to design an open plan office space is to balance the need to collaborate with employee privacy requirements. In an open plan office, the occupants are affected by activities surrounding them. Insufficient acoustic conditions cause distraction and a lack of speech privacy. Typically, an office design would entail a mix of open floor plan space as well as enclosed spaces such as meeting rooms and phone booth rooms for “closed-door” conversations.
At first thought, it is common for most designers to solely characterize reverberation time as the defining parameter for room acoustics in an open plan office. A good acoustic design will also consider speech intelligibility, relative sound levels and spatial decay of sound with respect to distance, especially when open plan offices are in the picture.

The following tips can assist in the acoustic design of an open plan office:

1. **Sound absorption**: Even the most well-made premises with modern looking conference rooms and meeting pods sometimes lack acoustic absorptive treatment. This leads sound to bounce from one reflective surface to another e.g. hard floor to exposed metal deck or concrete soffits to glass partitions, leading to lack of speech intelligibility and generally creating an uncomfortable acoustic environment. Considering installation of absorptive materials can improve the acoustic climate. A right balance of absorptive and reflective material is necessary, since an “acoustically dead” room would be counter productive.

2. **Sound masking**: It is crucial to have a certain degree of quietness so that people can focus on tasks at hand that require concentration. However, a situation where the office is “too quiet to be silent” needs to be avoided. This essentially means that if the office is too quiet, conversations that employees have with each other or over the phone with their clients can be clearly perceived by others. In order to avoid this scenario, sound masking (addition of artificial sound) can be considered.

3. **Sound Insulation**: Open plan offices have a considerable risk maintaining privacy. If a colleague can hear another colleague talking on the phone from across the room, then the reverse pattern is likely. This scenario can make people feel constantly observed. Often, there will be instances where two employees in adjacent workstations need to attend different video calls with their respective clients. The presence of absorptive screens fixed on the desk partition can greatly reduce speech interference. Also, it is encouraged that cubicle / workstation design does not allow for employees to face each other.
4. The modern-day office does not allow for the "cubicle farm" type of design which was a trend in the 90s. However, it would be beneficial to maximise the height of partitions between adjacent desks to ensure noise transmission control. For meeting rooms and meeting pods, attention in terms of sound insulation for light building elements is necessary.

Great benefits can be reaped from an open plan office design in terms of collaboration, communication and with the right acoustic advice at early design stages, a productivity boost is observed. Keeping in mind the current pandemic situation, the trendiest of open plan office design will need to be tweaked to ensure safety measures are in place for all office employees. Barriers and screens might need to be higher than usual and workstations will be at a greater distance.
AESG is a specialist consultancy, engineering and advisory firm working throughout Europe, Asia and Middle East that provides among other design principles, acoustic services. AESG offers a holistic acoustic design approach that involves environmental noise & vibration surveys, building acoustics including architectural and mechanical acoustics and assessment of industrial noise. AESG can utilize extensive professional and technical resources in order to deliver a good acoustic design on time. Furthermore, it aims at providing tailored services depending on the project type and value engineering when needed.

**How can AESG help?**

AESG are fully qualified and competent to help you benefit from appropriate acoustic design by delivering innovative solutions and applications.

For further information on acoustic engineering consultancy services, feel free to contact us directly via the following: Dimitrios Doutsios - d.doutsios@aesg.com or Manav Bhatia - m.bhatia@aesg.com

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Dimitrios is AESG’s Associate Acoustics Consultant, providing acoustics and vibration expertise gained in a variety of projects within various industries and across several countries, Middle East region and U.K. He holds an IOA Acoustics & Noise Control Diploma and Masters/Bachelors (Hons) degrees in Environmental Science and Environmental Engineering.

With a combined acoustics, sustainability, engineering and environmental sciences educational background and experience in mechanical engineering buildings design, Dimitrios’ projects portfolio varies between building acoustics-architectural & mechanical, environmental noise, noise control and vibration transmission control. The projects he has been involved include residential, hospitality, educational and commercial developments. Furthermore, he has been involved in the acoustic design of auditoria, hospitals, entertainment spaces and exhibition spaces.

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During his time at AESG, Manav has been involved in a plethora of challenging projects including hotels, condominium buildings, schools, theme parks as well as commercial and industrial buildings, providing acoustic consultation services. These services include environmental surveys, field testing, building acoustics and MEP acoustics. He holds an Msc in Construction Project Management from the Herriot Watt University and a B.Eng. Mgmt. in Civil Engineering and Management from the McMaster University, Canada.

Prior to working at AESG, Manav worked with reputed engineering consultancy firms in Ontario, Canada and Dubai, U.A.E. He is a member of the Institute of Acoustics (IOA), United Kingdom and is also currently a member of the Project Management Institute (PMI), United States.