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Put demands on sound in the office

Almost every other employee who moves from a personal office room to an open-plan solution complains about noise-related problems. The more intellectually demanding a piece of work is, the more peace and quiet is required.

By Finn Asnæs

If the noise consists of a conversation it is especially irritating, as the brain cannot simply filter out everything, but constantly monitors whether the sound consists of important information or disruptive noise. This is the view of Bjørn Berthelsen, Concept Developer at Ecophon, who are experts in acoustic solutions. He explains:

“When you ask people who have moved from smaller offices to large, open-plan offices what irritates them most in their daily lives, they mention noise. Three of the five most frequently mentioned issues relate to noise.”

Conflicting requirements

The balance between concentration and communication is a difficult one. We want to keep track on what other people are doing, to communicate and share knowledge. But at the same time we also want to have peace and quiet so that we can concentrate. When you communicate and share knowledge, the acoustic environment must emphasise positive sounds such as speech. At the same time, undesired noise must be limited, so that you do not disturb colleagues unnecessarily if they are working on individual tasks that require a high level of concentration. These conflicting requirements of acoustics are resolved by reducing sound propagation in the open-plan office and at the same time providing effective quiet rooms and areas in the neighbourhood.

Sound policy recommended

Bjørn Berthelsen advises more companies to draw up a sound policy, e.g. like the one that Post Danmark already has. A sound policy is about not only making the right technical requirements of the office's acoustics, but also about appropriate acoustic behaviour in the office.

Cover the ceiling

In an empty, non-treated room, sound reflects on the ceiling, which is the biggest open surface in the office. The ceiling must therefore be sound absorbing in large rooms. “The reverberation time (echo) can be reduced and undesired sound minimised with the aid of effective acoustic ceilings in absorption class A,” explains Bjørn Berthelsen. He points out that the popular screens do not dampen the noise sufficiently, nor do carpets absorb it all.

When the ventilation is switched off

The aim is not to achieve unnatural silence, but a level of acoustic comfort in which undesired sound from colleagues, photocopiers and traffic is dampened. Often we do not realise how much stress noise causes us.

“When a whirring ventilation system is suddenly switched off, you relax and enjoy the peace and quiet, without even having noticed how much this background whirring disturbed you,” concludes Bjørn Berthelsen.

Modern open-plan offices necessitate taking acoustics into consideration if a good working climate is to be maintained.

Facts about acoustics in the office

In recent years there have been many new developments in the interior design of office environments. In newer buildings glass, wooden floors and other hard surfaces are often used. To promote communication and knowledge, many opt for an open-plan solution, in which employees sit in the same room. An office with a lot of hard surfaces and little absorption creates undesired sound reflections. The sound takes a long time to “die down”. This means that employees are disturbed, both next to and far away from the sound source.

How to prevent noise

An acoustic ceiling in absorption class A minimises general sound propagation and reduces background noise in an open-plan office environment, so that employees do not disturb one another. You can also create peace and quiet at work by adding sound absorbing material: an acoustic ceiling with absorbent acoustic screens between workstations that are close together. You should also use complementary wall absorbers in an office environment, and in some cases extra absorption in the low-frequency range.

Outdated (Danish) rules

The current requirements for acoustics in offices are contained in the ten year-old Building Regulation BR 95 and the Danish Health and Safety Executive’s guideline entitled “Acoustics in work rooms”. The requirements are intended for offices with limited ceiling height and offices with carpets, upholstered furniture, a lot of shelves and plenty of paper – all items that are not normally found in today’s modern office. There is therefore agreement among acoustic experts in Denmark that the current requirements for acoustics in open-plan offices should be tightened to make the acoustic environment “future-compatible”. In both Sweden and Finland new, stricter standards for acoustics in offices have been drawn up in the last two years.

How to achieve a quiet working environment in the office

- 1) Minimise undesired sounds, e.g. avoid disruptive ring tones from desktop phones in the office.
- 2) Use sound absorbers in the best absorption class (Absorption Class A, according to EN ISO 11654:1997).
- 3) Noisy office machines should be located in closed, well-ventilated rooms.
- 4) Make demands in terms of the building’s sound insulation, so that employees are not disturbed by external noise (traffic, etc.).



- 5) Tell employees what good acoustic behaviour is. E.g. do not shout over to a colleague standing at the other end of the room, but use meeting areas and meeting rooms as intended.
- 6) The office must have a suitable number of sound-insulated meeting rooms to satisfy the need for concentration and privacy.
- 7) Users must be involved before they move into open-plan offices. Employees should know what they can expect, e.g. that it can never be totally quiet in an open-plan office environment.
- 8) Remember that sound is essentially positive. Desired sound is information and a necessity in most open-plan offices. If employees perceive sound as something negative, management must either try to change this perception or keep a long way away from open-plan office environments. Good office acoustics are not necessarily the same as a totally quiet office. Good office acoustics are adapted according to the activities that take place in an individual company.

