Designing the Quiet Office

NeoCon World's Trade Fair

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Outline of Presentation

Noise is a key issue in corporate interiors as it reduces employee productivity which directly impacts a company's bottom line: profitability**.** Poor acoustics, in fact, is the leading source of worker complaint, especially *in LEED facilities*. In striving for sustainability and LEED rating, designers turn to open-plans with open ceilings, high densities, smaller workstations and glass partitions to increased emphasis on employee interaction and spontaneous meetings. This presentation will provide architects and interior designers with an understanding of what proper acoustics means and how it's achieved in sustainable office environments.

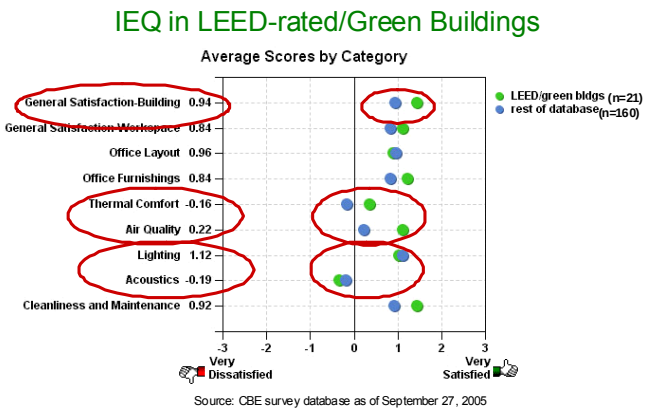
Talking Points

1. The concept of "The Quiet Office" needs to be considered within a big picture perspective. It's a relative term, in that "appropriate" levels of noise and sound control requirements vary based on the type of office setting (general workplace vs. conference room vs. private office vs. trading floor). The office user type and firm culture also need to be considered. For example, the acoustical requirements for a law firm are quite different from those of an advertising agency.

2. By providing a comparison of "traditional" office layouts to current trends we can see how the office environment has dramatically evolved. Even in the recent past, the traditional workplace featured hung ceilings, private offices with solid doors, and generous use of absorptive materials (fabric wrapped panels, carpeting, etc.) Today, the emphasis is on open plan, teaming spaces, and the "coming and going" of staff. Green design adds another layer of complexity by typically featuring hard flooring surfaces, exposed ceilings, and extensive use of glass to allow for natural light.

3. Certain critical issues impact "The Quiet Office": sources of interior/ exterior noise, adjacency requirements (i.e. where quiet spaces should be located), employee traffic patterns, and clients' desires for noise control are just a few of the things that should be assessed during the planning stages.

4. The Center for the Built Environment (CBE) provides instructive guidelines for workplace acoustics and is an invaluable resource for architects and designers. Research shows that acoustics is a major point of worker dissatisfaction, and this is even greater in LEED facilities.



5. Sustainability and LEED certification goals have created a unique dilemma for architects and acousticians: design vision vs. “functionality”. Trade-offs will be discussed. While there are specific acoustic criteria in LEED for Schools (and soon to be for Healthcare), there are "relativity" issues in LEED for CI with workplaces where culture and work function can vary radically.

6. How is sound level measured? What levels of sound are appropriate for different types of spaces?

Type of Space	Preferred Noise Criteria (NC) Range
Recording Studios, Concert Halls	15 - 25
Boardrooms, Courtrooms, Teleconference Rooms	25 - 35
Conference Rooms, Classrooms, Residences	30 - 35
Private Offices	35 - 40
Open Plan Offices	40
Lobbies, Restaurants, Retail	40 - 45

Typical Private Office

Speech Privacy Potential	
85	Total Privacy
80	Highly Confidential
75	Excellent
70	Good
65	Fair
60	Poor
55	None

Description of Privacy	
Raised Voice	*Normal Voice*
Partially intelligible	Unintelligible most of the time

Typical Conference Room

Speech Privacy Potential	
85	Total Privacy
80	Highly Confidential
75	Excellent
70	Good
65	Fair
60	Poor
55	None

Description of Privacy	
Raised Voice	*Normal Voice*
Barely audible, unintelligible	Not audible

7. When should the acoustician come on board? To be most effective an acoustician should be brought on board during the planning phases of a project. Review of the critical issues outlined earlier on in the presentation i.e. interior/exterior noise, critical adjacencies, etc. at the onset of a project’s planning can prevent costly construction methods down the road.

Designing the Quiet Office: Rules of the Road

1. **Good workplace acoustics is relative to business type and company culture.** A law firm might have different acoustical goals than an advertising firm, for example. Even within an industry, one firm might cultivate a buzz-like atmosphere, while another aims for a more tranquil environment.

2. **Ideal sound levels may vary within an office setting.** Job function and activity, collaboration and mobility spaces, teaming and public areas all require different target noise levels and should be designed accordingly.

3. **For the optimal use of a workplace, include acoustics at the space planning and programming phases.** Identify target noise levels, critical adjacencies and potential stacking issues early on. Correcting acoustical-related problems after the fact is costly and disruptive.

4. **Good acoustics is an orchestration of design solutions.** Insulated walls and underlayments, sound-absorptive design materials and finishes, ceiling treatments, baffling partitions, extra window-glazing, strategies to isolate mechanical systems, and sound masking -- are examples of opportunities for increasing acoustical performance for the workplace.

5. **Sound masking is not a plug-and-play solution.** While sound masking can greatly enhance workplace acoustics, it must be designed specifically for a space, then tested and adjusted. If it is not precisely targeted, you're just "adding noise."

6. **Green design and acoustical requirements need to be carefully balanced.** A green office need not be a noisy one if judicious use of sound-absorptive sustainable materials and noise attenuating strategies are employed where needed.

7. **Audiovisual installations are incomplete without acoustical design.** Reduction of outside noise, consideration of room dimensions and finishes, and precision equipment adjustments are some critical factors to ensure optimal performance of your audiovisual systems.

8. **Workplace performance – and a company's bottom line and profitability – depends on good acoustics.** Workers need to concentrate without distraction and collaborate effectively. Good acoustical design should enable both.