



**19
89** | **OVER
TWENTY
FIVE
YEARS**

Green offices are not cool: They raise values - by Marc Karell

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Many building owners and managers are skeptical about investing in green design of commercial space. It is a new concept to many, something they did not learn in school. Many will not accept change unless there are short-term business gains. And for some, even that is not enough; they don't want to do anything that may risk inconveniencing tenants. However, can a "greener" office environment save cost and also raise worker productivity reducing tenant turnover?

A report from the World Green Business Council (<http://www.worldgbc.org>) provides proof that green offices have a positive impact on worker productivity, a key competitive business issue.

One key for any tenant to be happy, be willing to stay in your building and thus pay you steady rent is that your building help get the most productivity out of the workers: better productivity and less absenteeism. The associated business cost of each absent, underproductive employee can be \$2,500 per year or more. If your offices can maximize productivity, that would be a boost to your business, as your tenants will want to stay in your buildings and you can have greater demand for your space.

The report reviews peer-reviewed research and outlines a number of key areas where green features have been proven to improve occupant productivity or health:

1. Indoor Air Quality (IAQ). The concentration of solvents, particulates, and micro-organisms that workers may be exposed to 40 or more hours per week has a major influence on productivity, such as absenteeism, alertness, and work output. Studies show that improved ventilation can increase productivity by as much as 11%, making an investment in filters or better fresh air replenishment a great value. For retailers, IAQ is important to ensure that customers are relaxed and comfortable which will, therefore, result in them being more willing to buy product.

2. Thermal Comfort. Thermal comfort of workers affects productivity too, dropping 4% when workers are too cool and 6% when too warm. Studies have also shown that by giving office workers some control over temperature, many are more willing to accept a wider temperature range. Such studies are complex, but the ultimate goal is to avoid extremes which can distract worker's attention and potentially make them more vulnerable to infections. I once came across a poorly functioning building where the office workers had to sit at their desks in parkas! You can imagine their poor motivation and productivity. The owner did upgrade the HVAC with quick, dramatic positive results.

3. Lighting. All (indoor) workers work under artificial lights. The amount of light (lumens) is critical for a person to perform their jobs safely and properly. The IES publishes information

about minimum recommended concentrations of light per s/f (in lumens/sf) for different rooms with different functions (office, parking garage, class room, etc.) However, recent research shows that productivity is more complicated than just ensuring the right concentration of light. Research shows that not all light is the same in terms of how they stimulate our brains. The key is to maximize what scientists call visually effective lumens (VELs), based on the relative amounts of scotopic and photopic light (S/P ratio). People appear to be more sensitive to cooler tone light (toward blue and green) rather than warmer light (toward yellow and red). It is worth investing in an experienced lighting professional to design productive lighting for your workers and tenants and to design the right light to highlight products if you are in retail.

4. Daylighting. The report describes numerous studies stating that seeing natural light through windows increases worker satisfaction and can even have health and mood benefits, a contrast to earlier trends of windowless offices built with the thinking that a worker is more productive if not distracted by looking outside. Allowing sunlight in does improve productivity and mood. Similarly, the report states that workers with a view of nature from a window or those who have plants near their desks are more productive than those without a connection to nature. Some studies have shown workers can increase their time-on-task by up to 15% due to the presence of a window with a view.

5. Noise and Related Distractions. Workers exposed to distracting background noise suffer potentially large drops in productivity. Studies show an up to a 66% drop in productivity when workers are exposed to high background noise. The report cites research suggesting that installing physical design features affecting acoustics can be effective at reducing distractions and background noise in offices.

CCES has the experts to help you improve your office, retail, or residential space to save you energy costs and improve the productivity and satisfaction of your and your tenants' workers. Contact us today at 914-584-6720 or at karell@CCESworld.com.

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