



## Green Building Design for the Workplace: A Look at Material Selections & Design Strategies

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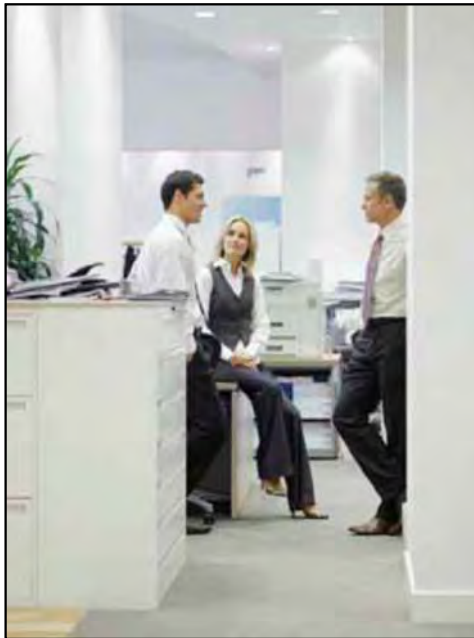
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How much time do Americans spend at work?

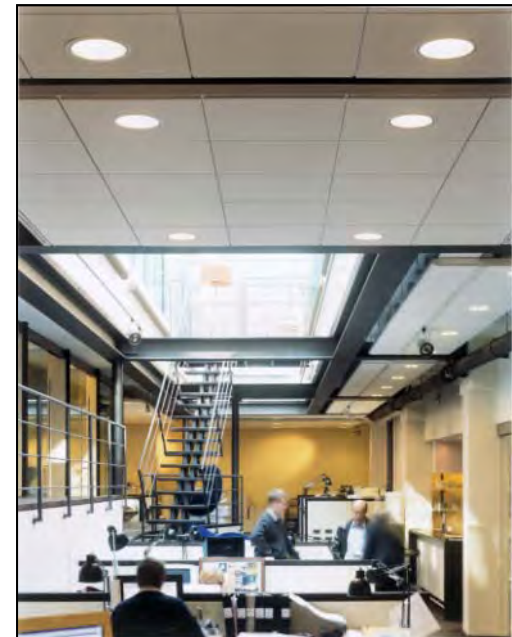
**8.7 hours**

BUT employees say that they only spend **45 percent** of their time at work actually completing their primary job duties\*

\* survey of 2,000 office workers conducted by AtTask and market research firm Harris Interactive

Survey showed that **nine out of ten** (employees) believed that **workspace quality** affects the attitude of employees and increases their productivity.\*

\*Hughes (2007) surveyed 2000 employees pertain to various organizations and industries in multiple levels. <http://www.scientificjournals.org/journals2009/articles/1460.pdf>





# The Physical Aspects of Comfort

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Access to Daylight & Outside Views

Healthy Indoor Air Quality

Thermal Comfort

Acoustics / Speech Clarity

Fewer Disruptions

Controllability of Lighting & Temperature

Ergonomics

# What Impacts Productivity?

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Nearly **65%** of office workers are distracted by too much noise.

Productivity increases by **18%** with access to daylight.

In offices, **productivity can drop as much as 66%** when employees, who are trying to read or write, are able to hear nearby conversations.

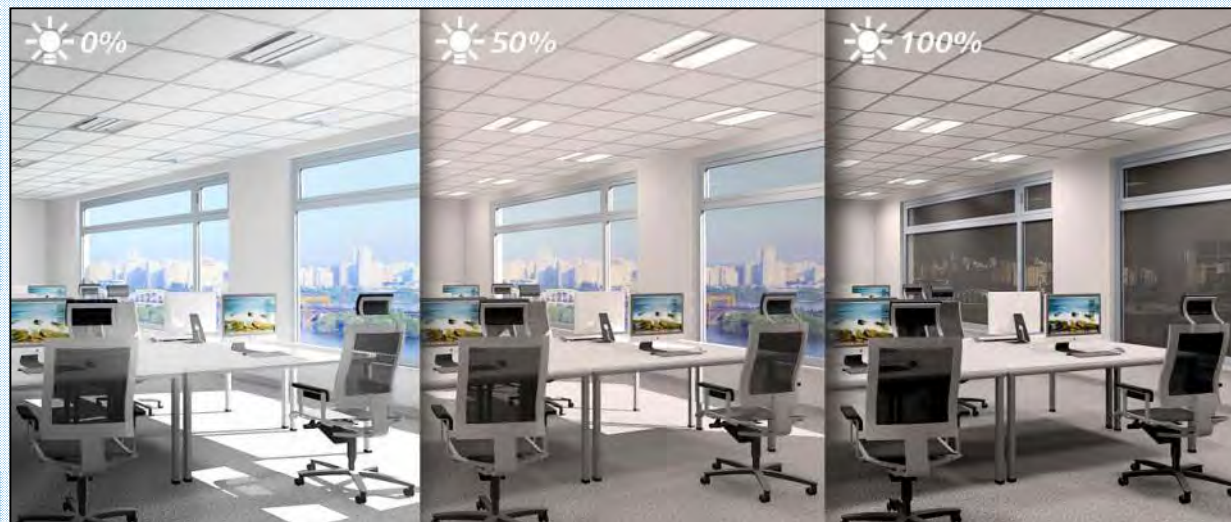
In buildings, access to **natural light, fresh air and outside views** has been shown to make people feel more energetic and inspired.

**Salaries and benefits account for almost 90% of the operational cost** of most commercial buildings, so even small improvements in productivity can bring significant benefits to business owners.



# Daylighting & Access to Outdoor Views

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Controllability of shades & lighting levels

Heat or glare by the sunlight or ceiling lights

# Indoor Air Quality

## Air is vital for human life!

Control pollutant pathways – office equipment rooms or storage for cleaning products

Dust, mold & pollen – mold growth on wet carpet or leaking HVAC systems

Outside pollutants – idling car engines or delivery trucks near a doorway or radon from the ground below





# Indoor Air Quality

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Tobacco smoke

Building materials & furnishings – VOCs in paint or furnishings

Particulates like carpet fibers or airborne fiberglass from ACT or insulation

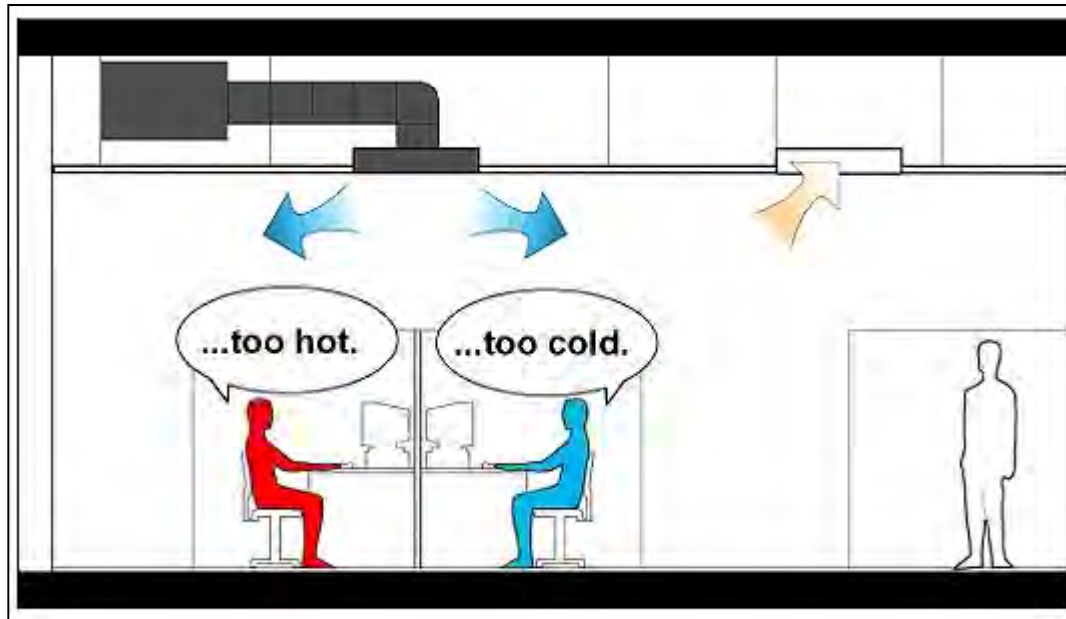
‘For U.S. employers, fatigue carries overall estimated costs of more than \$136 billion per year in health-related lost productivity’

\*NBRII Employee Survey White Papers / 5 Factors That Affect Your Employee's Productivity



# Thermal Comfort & Controllability of HVAC Systems

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Too drafty?

Too stuffy?

Too hot?

Too cold?

# Acoustics: Sound Absorption & Sound Blocking

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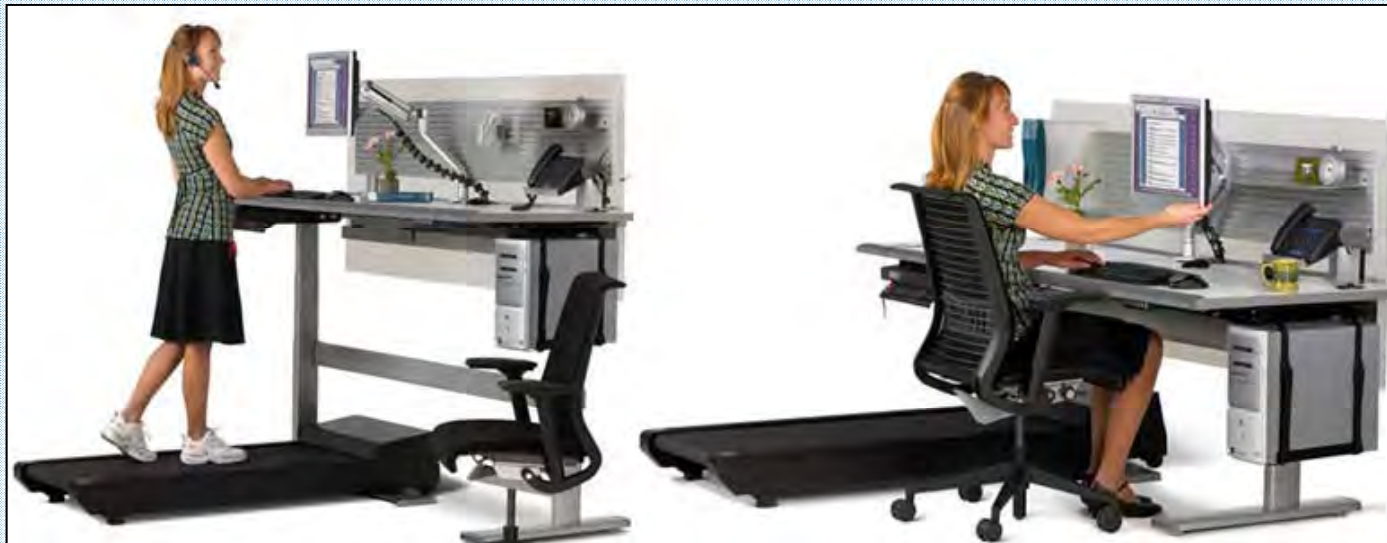


Low sound levels  
Good speech clarity  
Low sound propagation  
Fewer disruptions  
Longer attention spans  
Easier to concentrate



# Ergonomics

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# Open Office Plan

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**Consistent shifts in how we work: offices – open office plan – huddle rooms – flex spaces**

**Concerns:**

Distractions

Lack of Privacy



# Materials: What To Look For?

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Locally extracted or  
manufactured products

Recycled Content

Recyclability

VOC Certificates

Transparency Documents

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# Recycled Content

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## Look for Recycled Content in:

Carpet  
VCT Tile  
Porcelain Tile  
Countertops  
Insulation  
Acoustic Ceiling Tile  
Furniture



# Recyclability

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## Take Back Programs:

Acoustic Ceiling Tile

Carpet & Carpet Tiles


Gypsum



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# VOC Certificates



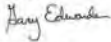
INDOOR AIR QUALITY PROGRAMS  
CARPET, CARPET CUSHION, FLOOR COVERING ADHESIVES,  
AND VACUUM CLEANERS

The Carpet and Rug Institute  
P.O. Box 2045, Dalton, Georgia 30722 USA

DAVID INDUSTRIAL GROUP LIMITED Mar 16, 2014

ANALYTE	MEASURED VALUE	CRl CRITERIA	EXCEEDS CRITERIA	MEETS CRITERIA, BUT WITHIN 25 %
TVOC	0.20	≤ 0.50		
Styrene	0.007	≤ 0.40		
4-Phenylcyclohexene (4 PC) <sup>2</sup>	0.006	≤ 0.050		
Ethoxyethanol <sup>1</sup>	0.021	≤ 0.050		
Tetrahydrofuran <sup>1</sup>	0.091			
Tetrahydrofuran, dioxane <sup>1</sup>	0.027			
Pyridoxane, dioxane <sup>1</sup>	0.012			

Description of Goods: Carpet  
Date Received at AQS: 15/02/2014  
Chamber Test Period: 15/02/2014 – 15/03/2014  
Product Labeling: 0.42 m<sup>2</sup>/m<sup>2</sup>  
Test Conditions: 1 ± 0.03 ACH, 50.0%RH ± 5.0%RH, 23.0°C ± 2.0°C

Sincerely,  
  
Gary Edwards  
Green Label/Green Label Plus Program Administrator

SCS Global Services does hereby certify that an independent assessment has been conducted on behalf of:

## ECORE International

715 Fountain Ave, Lancaster, PA, USA

For the following product(s):  
**Rubber Tile and Roll Goods:**  
ECOSurfaces, ECOSurfaces with ECOguard, Everlast, PlayGuard, Training Ground, UltraTile, QT

This product meets all of the necessary qualifications to be certified for the following claim:  
**FloorScore®**  
Indoor Air Quality Certified to SCS-EC10.2-2007  
Conforms to California Specification 01350 (Standard Method v1.1, effective January 1, 2012) for the school classroom and private office parameters<sup>1</sup>.

<sup>1</sup> Modeled Product Type: Flooring

Registration # SCS-F5-01793  
Valid from: October 1, 2013 to September 30, 2014





  
Robert J. Hrubes, Ph.D., Executive Vice President  
SCS Global Services  
2000 Power Street, Ste. 600, Emeryville, CA 94608 USA



# Environmental Product Declarations (EPDs)

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EPDs provide certified environmental data from the product life cycle assessment (LCA) which encompasses a products environmental impact from “cradle to grave”.

# Health Product Declaration (HPDs)

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The **Health Product Declaration Open Standard** is a standard format that systematizes reporting language to **enable transparent disclosure of information regarding building product content** and associated health information

## Health Product Declaration

the  
Health Product  
DECLARATION is...

a consistent language  
for product ingredient reporting

an essential part of the  
materials ecosystem

a free online tool for  
manufacturers

# Leadership in Energy & Environmental Design

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# WELL Building Standard

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# What can you do?

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**Manufacturer  
websites**

**Transparency  
documents**

**CALL YOUR REP**

