



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

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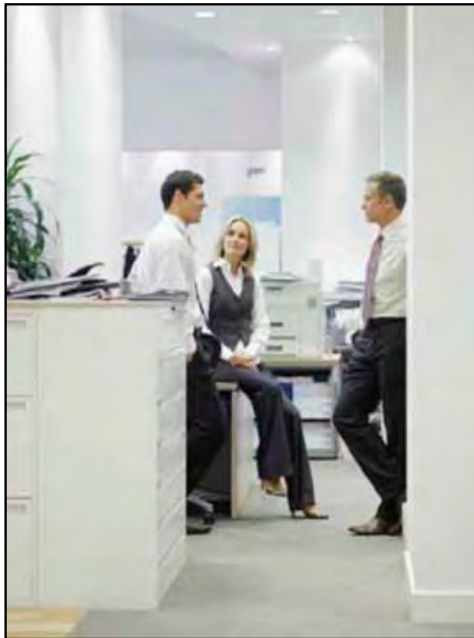
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How much time do Americans spend at work?

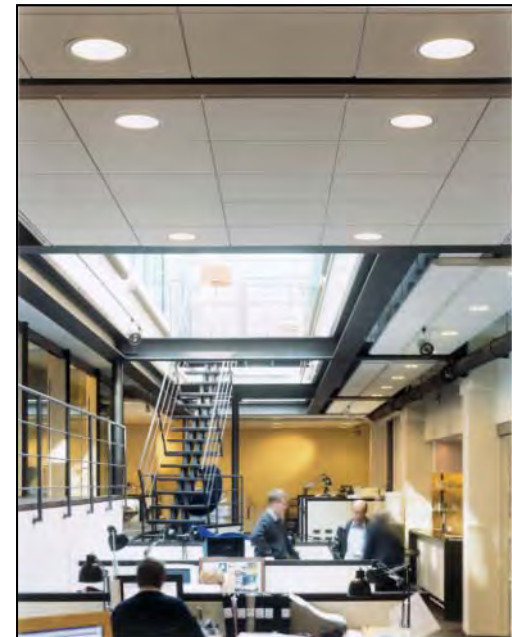
8.7 hours

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.

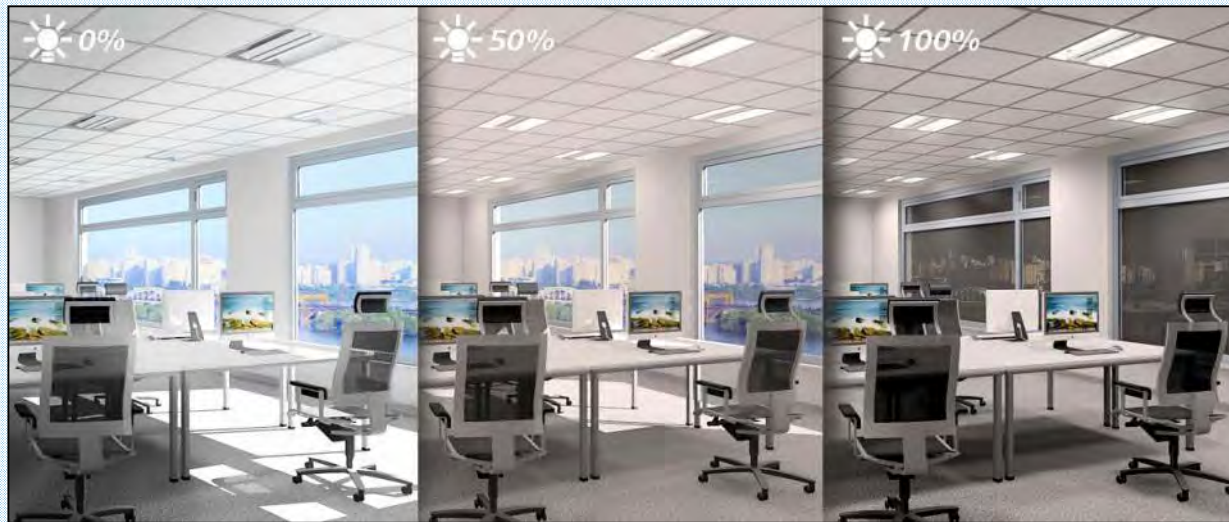
In offices, **productivity can drop as much as 66%** when employees, who are trying to read or write, are able to hear nearby conversations.

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

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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

Tobacco smoke

Building materials & furnishings – VOCs in paint or furnishings

Particulates like carpet fibers or airborne fiberglass from ACT or insulation

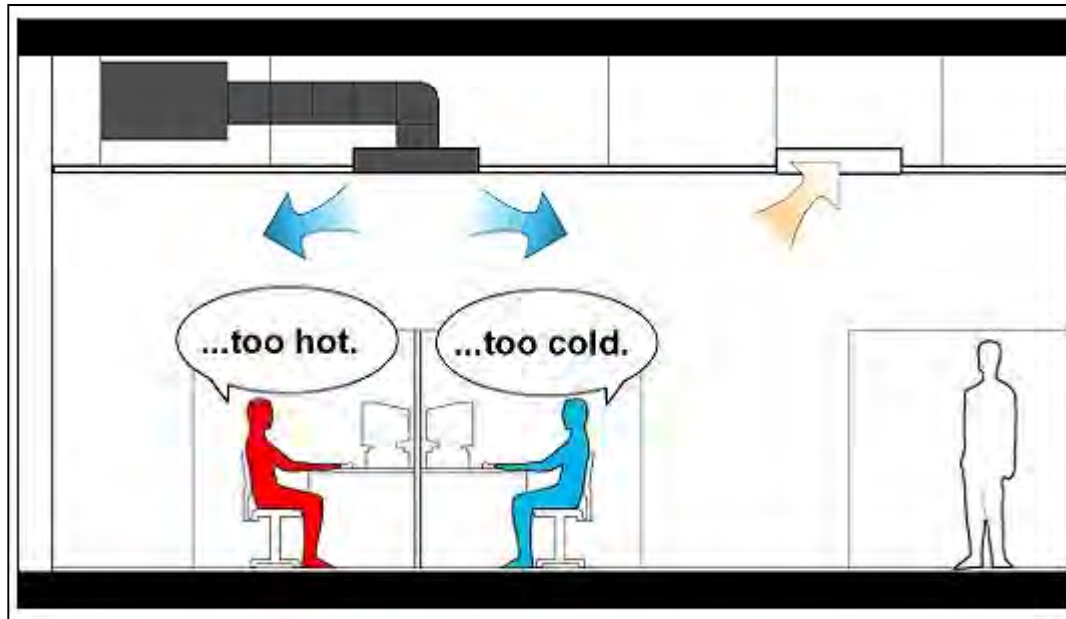
‘For U.S. employers, fatigue carries overall estimated costs of more than \$136 billion per year in health-related lost productivity’

*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

CR1 GREEN LABEL™

DAVID INDUSTRIAL GROUP LIMITED Mar 16, 2014

ANALYTE	MEASURED VALUE	CR1 CRITERIA	EXCEEDS CRITERIA	MEETS CRITERIA, BUT WITHIN 25 %
TVOC	0.20	≤ 0.50		
Styrene	0.007	≤ 0.40		
4-Phenylcyclohexene (4-PC) ¹	0.006	≤ 0.050		
Ethoxylated triphenylmethane ²	0.021	≤ 0.050		
Triethylamine ³	0.091			
Tetrahydrofuran ⁴	0.027			
Pyridine ⁵	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 m²/m²
Test Conditions: 1 ± 0.03 ACH, 50.0%RH ± 5.0%RH, 23.0°C ± 2.0°C

Sincerely,
Gary Edwards
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 parameters¹.

Modeled Product Type: Flooring

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

SCSglobal SERVICES

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

floor score
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PRODUCT CERTIFICATION
#0821

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

The image shows a physical copy of a Health Product Declaration (HPD) form. The form is titled 'Health Product Declaration' and includes sections for 'Product Information', 'Material Ingredients', and 'Health Concerns'. It features a grid for listing ingredients and checkboxes for various health concerns. The HPD logo is visible in the top right corner of the form.

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**

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documents**

CALL YOUR REP

