


A large indoor plant with fan-shaped leaves, likely a Ficus lyrata, is potted in a black ceramic pot. The plant is positioned in front of a glass door with a wooden frame. The background shows an office interior with a desk and chair. The overall scene is well-lit, suggesting an indoor office environment.

GET THE FACTS:

The  
bottom line  
benefits  
of  
a green  
workplace

One plant per 100 sq. ft. = 334% R.O.I.

A close-up photograph of several green leaves, showing their veins and texture. The leaves are vibrant green and appear to be part of a healthy plant.

## Creating Healthy Productive Workplaces: Workplaces that Connect People with Nature

### Why It Matters

The human asset is the most valuable and expensive asset of any business. In terms of cost per square foot, the human asset is approximately 10 times the total building operating cost and nearly 100 times the energy cost. No matter how it is expressed, when a business can give rise to personal productivity, the business wins.

It is becoming increasingly well demonstrated that biophilic elements, such as green plants in buildings, have real measurable benefits on productivity, emotional well-being, stress reduction, improved learning and healing.

During the last 20 years, concerns associated with the quality of indoor office environments have escalated in workplaces around the globe, especially now that green building designs are becoming a standard for construction. Yet modern architecture has only embraced the easily quantifiable standards of energy-saving materials and technologies. We are calling attention to the productivity benefits of the many less tangible, natural elements we refer to as "Authentically Green Design." Our love for nature, or Biophilia as it is known, is the missing factor in sustainable design.

### Productivity Gains

Authentically Green Design addresses the productivity gains stimulated by increased worker exposure to natural stimuli. A 2003 study of workers in a call center found that simply having an unobstructed view of natural elements was consistently associated with better overall worker performance. Workers with better views were found to process calls 7 percent to 12 percent faster, reporting less fatigue and higher levels of alertness than those with no view. Another recent study showed that computer programmers whose workplace included views of plants spent 15 percent more time on their primary task than equivalent workers without any view.

### Reduced Stress

Additional recent studies have also shown a marked decrease in stress levels (measured through blood pressure and heart rate) among workers whose building design allowed ample access to interior and exterior green spaces.

Several performance-based incentives to enhance employee productivity also give rise to stress, so the rare capability of plants to raise productivity while lowering stress is extremely valuable.





## Physical Health Benefits

The addition of natural green design elements, such as plants or gardens inside a building, provides increased productivity benefits via the improved physical health of occupants. The addition of plants and interior gardens is an efficient way to improve indoor air quality by naturally "cleansing" airborne pollutants from a building—thereby alleviating economic losses incurred by worker absenteeism.

A 1996 Norwegian study quantified such benefits, finding that "when subjects had plants in their office building, symptoms of fatigue, headache, dizziness, and concentration problems fell by 30 percent, cough symptoms fell by 40 percent, while hoarseness and dry throat were reduced by 30 percent."

## Green Gathering Spaces

Urban designers have long understood the intangible benefit of creating natural public gathering places. Plazas and engaging lobby spaces become a natural focus of creative human interaction. This principle should be equally applied to the modern workplace environment. Such areas produce tangible results in the form of increased productivity and happier, healthier workers. In an 8-month study, a Texas A&M University research team explored the link between flowers and plants and workplace productivity. During the study, both women and men demonstrated more innovative thinking, generating more ideas and original solutions to problems in the office environment that included flowers and plants.



## Authentically Green Workplaces

The concept of Authentically Green Workplaces promotes interior landscapes to increase worker health, productivity and creative interactions between co-workers. In an era where the multi-generational workplace is more diverse than ever, progressive design leaders have the responsibility to create environments that will recognize and enable this potential.

## Demonstrating Our Love of Authentically Green Workplaces

Judith Heerwagen, Ph.D., a psychologist, suggests that our need to have plants in our lives is exhibited in the competition for offices with views to the outdoors. In workstations without views, people adapt by surrounding themselves with potted plants, images of nature, and nature-focused screen savers on their computers. Our love for nature—and this concept of Authentically Green Workplaces should influence workplace design and is relevant to all buildings where people live, work or learn.

## Now You Know

***A workplace with plants and flowers substantially improves employee health, problem solving skills, creative performance and job satisfaction, and that:***

**One plant per 100 sq. ft. = 334% R.O.I.**

**Here's how we calculate the Return On Investment (R.O.I.):**

- The average wage earnings for workers is currently \$36,140 per year.
- They are absent from work 3.6 percent of the time costing \$1,301 per employee.
- Studies prove absenteeism can be reduced by 14% in offices with at least one plant per employee. That amounts to \$182.14 or about a day and a half of saved absenteeism per employee.
- The cost to provide a plant program of one plant per employee is about \$3.50 per month per employee or \$42 per year.
- That investment in a plant program will return \$140.14 per employee or a 334% R.O.I.

We bet you didn't know that investing in plants was that good for your business. BMW knows. That's why their offices look like the photo at the right.



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