

## **BENEFITS OF INDOOR PLANTS – GREEN THUMB SERVICES LLC**

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Interior landscaping has become increasingly popular in the last 30 or 40 years. Many architects now include plants in design specifications for public areas. Plants are a welcomed addition that are appreciated when visitors walk through the door.

### **Plants are Important in Buildings**

- Yes they make buildings look more attractive and welcoming, but plants are actually good for the building and its occupants. There are a good number of research studies that show these beneficial effects<sup>a</sup>.
- Plants help to decrease sickness absence and reduce workplace stress. They also increase productivity and job satisfaction<sup>b</sup>.
- Plants provide a tranquil and relaxing environment for staff and visitors<sup>c</sup>.
- Plants help increase retail spending by positively affecting a person's perception of a building.
- Plants improve the indoor air quality<sup>d</sup>.

Research tells us that people do respond positively to the presence of plants in buildings. This is true when plants are healthy, clean, and well displayed. It gives the impression of an organized and well maintained business and facility. It improves the physical and psychological well-being of occupants. Some research notes follow.

#### **<sup>a d</sup> Clean the Air and Improve Well-Being 23%**

Research indicates that plant-filled rooms contain 50% to 60% fewer airborne molds and bacteria than rooms without plants.

Dr. Bill Wolverton spent nearly 20 years at the Environmental Research Laboratory at John C. Stennis Space Center testing this. He found that plants suck chemicals out of the air, absorb the office pollutants into their leaves and transmit the toxins to their roots, where they are transformed into a source of food for the plant. Based on those findings, Dr. Wolverton recommends that everyone have a plant on his or her desk within what he calls the "personal breathing zone." This is the area of six to eight cubic feet where employees spend most of their working days. **Only one plant per 100 sq. ft. will do the job!** Just 15 to 20 plants are enough to clean the air in a 1,500 sq. ft. area.

A 1996 Norwegian study by Professor Tove Tjeld of the Agricultural University in Oslo, Norway found that **health symptoms dropped by 23% when plants were present**. Symptoms of fatigue, headache, dizziness, and concentration problems fell by 30%, cough symptoms fell by 40%, while hoarseness and dry throats were reduced by 30%.

#### **<sup>b</sup> Increase Employee Productivity and Reduce Workplace Stress**

Research has shown that **plants significantly lower workplace stress and enhance productivity**. At Washington State University, Dr. Virginia Lohr performed a study where subjects in an environment containing plants were found to be 12% more productive and less stressed than those in environments with

no plants. Another study found that workers who spend at least 4 hours a day on a computer show a significant improvement in efficiency and concentration when plants are present.

**<sup>b</sup> Reduce Stress and Absenteeism by 3.6 days/year.**

Two Dutch studies revealed that a considerable proportion of sick leave can be attributed to building related health complaints. Research published by Bio-Safe Incorporated confirms that offices are often 10 times more polluted than the air outside. Office environments can lead to a marked increase in employee illnesses from poor indoor air quality. Workers were found to be absent 3.6 days.

**<sup>c</sup> Plants clean our indoor environment by absorbing carbon dioxide, increasing relative humidity, and reducing levels of toxic pollutants (benzene, formaldehyde, and nitrogen dioxide).** Studies by Roger Ulrich (1993, 1984) have consistently found stress reducing and health benefits. Dr. Wolverton, in studies for the NASA program has shown that plants remove toxins from the air. In particular the soil environment, that the plants roots nurture, is where most of the pollutants are removed. They also reduce dust levels, noise levels, and air temperature. Ambius Plants in Australia describes them as “miniature air conditioners”.

**<sup>c</sup> By absorbing office pollutants into their leaves and emitting clean oxygen, interior plants can cut down on sick leave expenses considerably.** Studies by Roger Ulrich (1993, 1984) have consistently found stress reducing and health promoting outcomes associated with passive viewing of nature stimuli through windows.

R. Kaplan (1992) reports similar results in a field study of office workers. Kaplan found that workers who had window views of nature felt less frustrated and more patient, and reported more overall life satisfaction and better health than workers who did not have visual access to the outdoors or whose view consisted of built elements only. Viewing nature and garden scenes were found to reduce stress within 3 to 5 minutes. The positive effects of nature may also extend to the immune system, thereby directly affecting human physical health (Parsons, 1991)