

Using Plants to Address Issues Dear to FMs' Hearts

Colleen Smith of Plants for People demonstrates how plants can make a financial difference.

Have you ever thought of yourself as a holistic doctor for the workplace? After all Facilities Managers are assigned many tasks to not only keep the building in good order, but to keep everything running smoothly. And yet historically FM's attitude to interior planting was definitely subjective ie those that like plants supported interior landscaping and those that didn't – well, I'm sure you know the answer.

And this is despite the fact that plants and interior landscaping could be the answer to many an FM's prayers – effective and potentially budget saving.

Plants can help reduce energy costs and equally importantly help reduce absenteeism. Contentious? Perhaps not when you look at the research that backs it – but more of that later.

What's in a name?

The recent American study, the Whitehall Report published in the Journal of Occupational and Environmental Medicine, questioning the existence of Sick Building Syndrome has been well reported. But whether buildings can be sick or not, the symptoms that have been linked to this syndrome since the 1980s can certainly be 'treated' with plants, and a recent report suggests that as many as four out of ten workers could be SBS sufferers.

The ailments linking buildings to this diagnosis are linked to the emissions of Volatile Organic Compounds (VOCs). VOCs are released into the air by man-made materials and solutions, electronic equipment, and such everyday products as personal hygiene improvers! This toxic soup from upholstery, carpets, paint, paper, cleaning products and adhesives, surrounds us.

This is where healthy plants can help. They may look as though they are just sitting pretty but all the time they working for our good. They absorb they VOCs whilst emitting oxygen for us to breathe – a perfect symbiosis!

The Environmental Protection Agency has claimed that measurements of polluted air inside buildings can be up to ten times higher than outdoor air. A fact that may shock some but come as little surprise to regular sufferers from minor ailments.

Plant doctors

Research in Norway showed these symptoms were alleviated by interior planting. In her four studies, Professor Tove Fjeld found symptoms reduced – for headaches, skin irritations, blocked sinuses and fatigue – by an average of 25%. Headaches were lowered by almost 50% in one study.

The knock on effect was a lower absenteeism, leading to cost reductions for sick pay and temporary staff. In the Oslo x-ray hospital study, staff absenteeism dropped by two third, from 15% to 5% not just for a few months but for longer than five years.

How does this occur? Plants absorb VOC emissions through their leaves and their growing medium (compost or hydroponics); most VOCs are taken down into the plant's roots where the minute organisms that live there turn them into plant food. A perfect example of natural recycling!

It amazes me that, as 30%* of Britain's 187 million sickness days are due to SBS sufferers, so little focus has been given to this.

Case studies prove the point

A point proved again at Aerospace in Dorset. They had complaints and absence due to minor ailments linked to SBS, so a local landscaper was called to plant this section and miraculously the ailments disappeared. But when subsequent budget cuts demanded the removal of the plants, the symptoms returned. No surprise then that the plants were reinstalled.

In BMW's HQ in Munich, the HR Department asked for planting to address complaints of many SBS-linked ailments, but Management was sceptical. They eventually agreed but set up a monitoring study. The results were amazing – 93% of the computer workforce felt better, absenteeism was reduced and higher humidity was achieved, further improving working conditions. Management conceded and the plants stayed.

Fjeld would acknowledge that there are many contributory factors to our health and well-being. A key point is that essentially our physiology hasn't changed in 10,000 years when we have mostly lived and worked in the great outdoors, 'at one' with nature. But since the industrial and technological of the last 150 years, our bodies have had to adapt and are still trying to acclimatise.

Now we spend most of our time at work, and less than half an hour outdoors every day! A few years ago NOP found that 70% of the workforce in London spends more time looking at a computer screen than they spend indoors. No surprise there.

Considering we spend all that time indoors and we breathe in 6-10 litres of air per minute (that's a staggering 15,000 litres a day) then the quality of the air we breathe should be the best it possibly can be.

How many plants do we need to clean the air?

For 12m² room by one person

Three specimen (floorstanding) plants

OR

Six desk top size plants

Will adequately reduce toxins in the air to safe levels.

Not 5 a day, just 1 per desk

Besides cleaning our air, making us feel better and reducing absenteeism, plants also improve concentration, motivation, creativity and productivity.

Research by John Berg at the engineering company DHV in Amersfoort, found that workers who used a computer for four hours or more a day – were able to concentrate better and were more productive with a plant by the computer.

A call for a plant on, or by every desk in every workplace methinks. A natural solution to improve wellbeing at work and one that every company or corporation could benefit from.

Plants as part of stress management initiatives

UK research backed up in the USA, showed that plants can help to keep us calm.

Helen Russell at the University of Sussex had her study group perform mental arithmetic in a planted and non-planted room. Virginia Lohr at Washington State University, performed tailored computer programmes, again in a planted and a non-planted room.

Both studies showed that the physical signs of stress ie pulse rates and blood pressures, were reduced or returned to normal more quickly in the delegates working in the planted rooms. What's more Virginia Lohr measured productivity increases of 12% in the delegates working in the planted rooms.

So these natural stress busters will keep employers and employees happy.

Stress is a big cause for absence. Statistics collected by the aforementioned NOP research found that almost half of workers felt stressed during an average day and this figure rose to 65% amongst 25-24 year olds.

Keep it clean and comfortable

Dry air is known to cause much discomfort and yea, plants can come to the rescue here too. But another little known fact is that they can also lower dust pollution.

These natural miracle workers return well over 90% of the water we give them back into the air. This raises humidity levels (we are most comfortable in humidity levels of about 50%), makes us more at ease and the dust quickly sinks the floor, making it easier to clean up.

Obviously water-loving plants are best for this – bamboos, ferns, umbrella plants but even standard houseplants can increase humidity levels by 2.5%.

Plants reduce energy meltdown?

As fuel prices soar and supplies dwindle, plants have an energy conservation role too. Planting has long been used to shade buildings on the outside but interior landscaping can also help. Plants create their own mini micro-climates around them, so helping to solve or reduce the amount of air conditioning necessary.

German solar architect Dieter Schempp finds that planting can reduce temperatures by 3-5°C and trees and shrubs placed around buildings, inside and out, can save hours of air-con, absorb heat and provide necessary shade.

In Schempp's words "A well-planned interior planting scheme combined with adequate methods of ventilation, will take over the tasks of air-conditioning without the need for technical aids and little maintenance. During the summer, the plants must cool the room by providing shade and transpiration. Plants with large leaf surfaces are needed for this job."

In Herten, Germany, Schempp designed a circular glass atrium to form the Cultural Centre extension to the library. Here the air, complete with VOCs, is filtered into the Centre, where the plants absorb and clean it to produce oxygenated air, which in turn is filtered back into the reading rooms. No wonder they claim the air feels pure!

Building energy costs have been reduced by 50% and temperatures, which can reach 22°C in winter and 30°C in summer, are controlled by opening doors and ventilation flaps. Improved atmosphere and visitor reactions as well as cost savings.

Plant benefits in brief

- Make us feel well
- Reduce symptoms linked to SBS reduce absenteeism
- Improve concentration
- Improve productivity
- Motivate us
- Can be used to help reduce energy costs
- Can improve humidity levels
- Reduce dust and make it easier to clean
- Keep us calm – reduce symptoms of stress
- Improve our creativity
- Improve behaviour
- Reduce noise
- Encourage shoppers to stay almost half an hour longer in shopping centres

Plants work in buildings. Forward thinking FMs could do worse than take a fresh look at their interior landscaping and speak to one of the many professional landscapers. Take a look at www.efig.eu.com to source a landscaper. Or contact Indoor Garden Design who have very kindly supplied many of the images from their work: www.indoorgardendesign.com

More information on the research and case studies can be found on www.plantsforpeople.org