

Plants - our perfect partners

CLEAN AIR FACTORY

- › Plants clean the air we breathe by removing harmful, unseen toxins (VOCs) emitted into the air by man-made products and us!
- › Toxins are absorbed and taken to the plant's roots
- › Micro-organisms living there, turn them into food for the plant

PLANTS ARE THE GREENEST WAY OF IMPROVING INDOOR AIR QUALITY

- › **All plants** remove toxins from the air!



LIVING IN HARMONY

- › Plants give us 'two-way refreshment': They give us equal amounts of Oxygen for the CO2 they absorb



Oxygen is vital to all organisms that require oxygen for respiration. The living processes of animals would deplete the atmosphere of oxygen if it were not replenished by photosynthesis. Life supporting oxygen is produced by plants...

DR BILL WOLVERTON



- › In offices in Edinburgh, levels of CO2 were reduced by 50% after introducing plants
- › CO levels were reduced significantly too
- › CO2 causes us to feel drowsy or heavy headed. Make sure the plant is in its best location to ensure it works well
- › Some plants such as Orchids, Bromeliads and Succulents, make this Oxygen/CO2 exchange at night due to their original habitat conditions

Did you know we breathe in 5 – 6 litres of air per minute?



HOW MANY PLANTS DO YOU NEED?

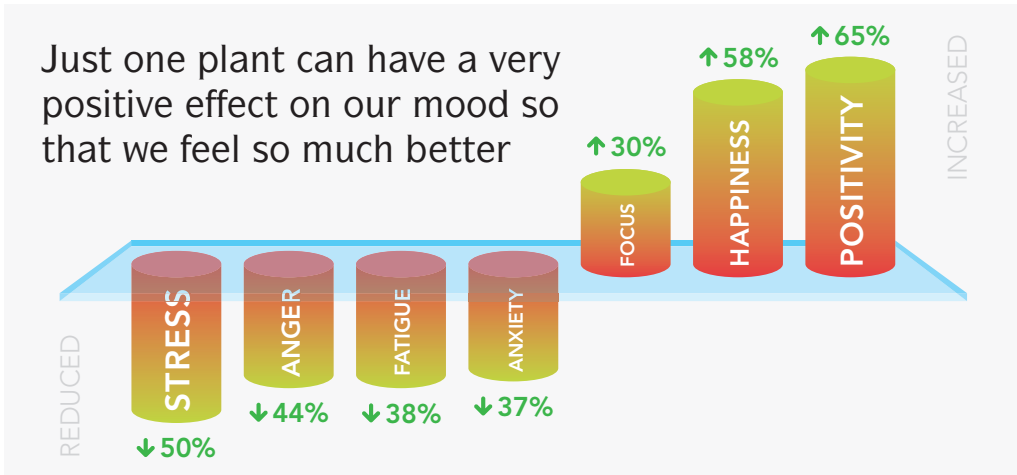
- › Just one plant will improve mood and reduce stress and anxiety
- › 1 plant for every 3 people can improve indoor air quality

PLANTS KEEP US HEALTHY

- › Plants reduce symptoms linked to Sick Building Syndrome
- › They can reduce headaches by 45% and tiredness by 32%
- › As a result absenteeism can be reduced by anywhere from 30%-60%
- › Can you see plants from your desk? Good news they'll keep you stress free and less likely to go sick!

PLANTS CREATE A CALM OASIS

- › The physical symptoms of stress – higher pulse rates and blood pressure – return to normal more quickly when plants are present
- › When employees are less stressed, they take less time off sick. And their performance can be as much as 12% better
- › Plants have an uplifting effect on people who are stressed or tired
- › Plants help to reduce the stress of surgery ensuring that patients recover faster and need less medication and attention



KEEPING US FOCUSED

- › Plants improve our performance (12%)
- › And our concentration (23%)
- › Particularly true if we sit in front of computer screen for more than 4 hours a day
- › Plants keep us more focused and attentive
- › Even just one plant will reduce our feelings of negativity helping us to feel and perform better



HOW PLANTS AFFECT OUR CREATIVITY



- › Men are more creative with plants in the room (15%)
- › Whilst women are better able to solve problems more flexibly
- › In fact, plants stimulate and improve performance in creative tasks
- › And improve our confidence and energy

DID YOU KNOW...

...plants in shopping malls increase shopper stay time by half an hour

...and plants outside a shop give it a higher quality perception



PLANTS ARE REALLY GREEN!

- › Plants save energy by using plants to shade room from the inside!
- › This can reduce the need for air conditioning or at least reduce the need for it as often

FEEL GOOD FACTOR

We enjoy working in planted offices

We are more confident

We experience better job satisfaction and speak more highly of our colleagues and employers!

WHAT ELSE CAN PLANTS DO?

- › Raise humidity levels so that we are more comfortable
- › Ensure there is less dust around (20%) to irritate or need cleaning up!
- › Lessen noise – the leaves deflect and diffract sound especially where there are no carpets



Research Bibliography

Dr Bill Wolverton, NASA 1990s
Ronald Woods, University of Technology, Sydney, Australia (2001 & 2004)
Professor Tove Fjeld, University of Agriculture, Oslo (1996 - 2002)
Professor Margaret Burchett, University of Technology, Sydney
Andrew Smith, School of Built Environment, John Moores University, Liverpool (2008)
Kwang et al, National Horticultural Institute, Korea (2008)
Dr Manfred Weidner, Botanical Institute, University of Cologne (1990s)
Bill & John Wolverton (1990s)
Tina Bringslimark's, (University of Agriculture, Oslo, Norway 2008)
Dr Leivi Sandvic, Specialist for Medical Statistics, University of Oslo, Norway (1990s)
Professor Virginia Lohr, Washington State University, USA (1996)

Helen Russell at the University of Surrey (mid 1990s)
Prof Roger Ulrich, Texas A & M University, USA (1984, 91, 92, 99 & 2001)
Dr John Hesselink, TNO in The Netherlands (1995)
Engelbert Kotter, Bavarian State Institute of Viticulture and Horticulture (2002)
Park and Mattson, Kansas State University, USA (2008)
John Berg, DHV AIB, The Netherlands (1995)
Amanda Read, Royal College of Agriculture, Cirencester (2005)
Shibata & Suzuki's (Bunko & Doshiba Universities, Japan 2003)
Jorn Viumdal, University of Agriculture, Oslo, Norway (mid 1990s)
Kathleen Wolf's (Washington State University 2002)
Nancy Wells, Cornell College of Human Ecology, University of Michigan (2002)