



In 2002, staff in the computer operators department at BMW Munich Headquarters reported regular respiratory complaints, headaches and problems with dry eyes and dry skin. There was a clear problem with the indoor air quality. Safety and Health staff suggested living plants to help to clean the air.

BMW management was skeptical the solution could be so simple. With German thoroughness they carried out an investigation.

BMW collected data on toxic substances, humidity, germs and acoustics in the problem office and then introduced a large number of green plants.

New data were collected in the planted office during the following 12 months, up to mid 2003. In that same period the same tests were repeated in 2 other, unplanted, offices of the same size and with the same layout, one with air-co, the other one without. All test results were studied by BMW technical staff and by external medical and acoustics experts.

The initial skepticism disappeared when the well-being of the employees clearly improved in the planted office. **Respiratory complaints fell by more than 70%.** The overall toxic compounds level went down 68%.



Organic germs density, measured in germs per cubic metre was at 220 in the green office versus 660 in the air-co office and 360 in the outside air, next to the office building. This was a remarkable result because it was feared that the organic planting material would lead to an increase of germs.

Also acoustics were better: to obtain the same level of acoustic comfort, 91 square metres of partitions were needed in the unplanted office.

Relative humidity levels went up by 20%, reducing complaints about dry eyes and dry skin dramatically.

| | Reduction achieved through absorption by plants |
|-------------------------------|---|
| Total VOC | 68% |
| Formaldehyde | 28% |
| Acetone | 76% |
| Benzol + Butanol + Cyclohexal | 38% |

Beate Klug, the Health and Safety Officer for BMW commented, “Once the planting was introduced, 93% of the employees working in these areas felt healthier and more motivated to work. They praised the reduction in noise levels and favoured working in the ‘green’ workplace.”

Statistics showed that most absences (30%) had been due to respiratory illness but once the plants were introduced these figures fell by more than 50%. It was clear that the positive effects could be attributed completely to the plants: no other changes were implemented in the office. Even more important is that these positive effects proved to be sustainable.

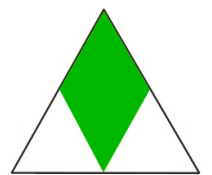
Staff from the green office were relocated in 2004 to another building. They took the plants with them and found that using only 60% of the original plants had the same positive effects. This confirms the findings of researcher Ronald Wood in Australia that having 3 potted plants in your neighbourhood gives you the same beneficial effect as 6 plants.

Today when any BMW office has to be set up or redesigned management sees to it that indoor plants are included in the interior design, whenever aesthetically and functionally justifiable.



(Courtesy of Michael Mohrlang at BMW and Plants for People. You can obtain a summary report of the BMW tests from HEALTHY GROWTH.)

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