

## *Bring a breathe of fresh air into your working life*



### **BUILDINGS CAN CAUSE PROBLEMS**

..... We often hear the term 'sick buildings', these are buildings that have either poor ventilation or badly serviced air conditioning and contain construction materials and/or furnishings that produce noxious emissions. Most commercial buildings constructed during the past three decades are also more tightly sealed than older buildings, thus concentrating noxious emissions.

Most people in developed countries work, shop and relax in these 'sick buildings'. 'Sick buildings' are a potential health hazard!

Living plants can solve the problems associated with 'sick buildings'. The correct placement of suitable plants will reduce toxicity levels in poorly ventilated buildings and increase the effectiveness of existing air conditioning systems.



### **NASA RESEARCH PROVES PLANTS CONTROL INDOOR AIR POLLUTION**

NASA established that indoor plants filter at least three chemicals: benzene, formaldehyde and trichloroethylene. Low levels of these chemicals are released into virtually every modern environment. Benzene is a solvent used in petrol, ink, oil, paint, plastic and rubber. Formaldehyde is present in virtually all indoor environments: urea-

formaldehyde resins are used in foam insulation, particle board and pressed-wood products; it is also present in tobacco smoke, natural gas and kerosene. Trichloroethylene is used in metal degreasers, drycleaning solvents, inks, paints, lacquers, varnishes and adhesives.

Recent environmental studies have shown that air pollution indoors is a major source of public exposure to air pollution. Sustained exposure to these chemicals causes chronic health problems. Living plants do reduce the levels of these and other chemicals.

### **THE AUSTRALIAN SITUATION**

In Australia up to 75 per cent of buildings are affected by 'sick building' syndrome. A leading Australian architect recently warned that building owners are rendering themselves liable to workplace health and safety based litigation owing to their not addressing the problems of indoor air pollution.

The Australian Society of Environmental Medicine reported recently that air-conditioning can trigger chemical sensitivity and respiratory illness and that early model air-conditioning systems do not recycle fresh air adequately. Re-used air spreads bacteria, viruses and chemicals from furniture and carpets exacerbating the problems of 'sick buildings'.

Peddle Thorp & Harvey, the architect for the new Shell Australia corporate headquarters in Brisbane



## IMPROVE PRODUCTIVITY

By using plants to maintain a high standard of air quality, employers can ensure a high level of employee productivity.

Illness associated with poor air quality and low humidity, such as sore and itchy throats, congestion, headaches, fatigue, nausea and skin rashes, cause high levels of absenteeism. Worksafe Australia reports that 9% of the workforce take off at least one day from work every fortnight because of sickness and the highest single percentage of related illnesses are of a respiratory nature.

The aesthetics of plants in an office has been shown to increase employee productivity.

## WHICH PLANTS TO USE

Different plants are required for different working situations. The US-based Plants for Clean Air Council, established following NASA's research into the use indoors of living plants, recommends a range of plants for

high-medium- and low-light conditions. These same plant species are available in Australia.

Preferred plants in areas of high light density include the Ficus family (Weeping Fig) and some of Dieffenbachia species. In medium light, Chamaedorea (Bamboo Palm) and Dracaena varieties such as Marginata, Massangeana and Deremensis fare best. In low light, Spathiphyllum (Peace Lily) is most suitable.



## INTERIOR PLANTSCAPERS

Interior Plantscapers have the expertise to assist you in the selection and care of living indoor plants. Interior Plantscapers can provide:

- ❑ a plantscape advisory service;
- ❑ assessment and evaluation of lighting, temperature, ventilation, architectural design and furnishings;
- ❑ healthy, attractive living plants, in a selection of containers;
- ❑ efficient and effective living plant care, including regular watering, cleaning of foliage, feeding, and plant restoration and replacement;
- ❑ on-call technicians;
- ❑ regular inspections by plantscaping supervisors;
- ❑ quality control and assurance.

These services ensure your indoor air quality is improved.

## PLANTS SAVE MONEY

Living plants provide a viable alternative to demountable partitions in the modern open-plan workplace. Not only are they healthier and more attractive but they can also be rearranged and relocated with the minimum of disruption, thus saving time and dollars.

Because they are easily relocated, living plants obviate the need for costly alterations to building structures or for expensive adjustments to existing air distribution systems.

For the building owner and office manager wishing to improve indoor air quality, plants offer the most economical solution. NASA research has shown that there is a significant cleansing effect from one plant per 10 square metres in any office.

**Chemicals (per cent) removed by plants from a sealed chamber during 24hr period.**

	FORMALDEHYDE %	BENZENE %	TRICHLOROETHYLENE %
Dracaena massangeana (Happy Plant)	70	21.4	12.5
Dracaena deremensis (Janet Craig)	50	70	20
Ficus benjamina (Weeping Fig)	47.4	30	10.5
Spathiphyllum (Peace Lily)	50	80	23
Scindapsus aureus (Golden Pothos)	67	67	9.2
Chrysanthemum morifolium	61	53	41

Many other plants will also improve indoor air quality. NASA is continually testing other plants. Interior Plantscapers can advise on the best plants for you to use.

# LIVING PLANTS

*Naturally*

## LIVING PLANTS FOR HEALTH

Living plants convert the carbon dioxide we exhale to oxygen, which is vital to our survival. Recent National Aeronautics and Space Administration (NASA) experiments in the USA prove that living plants do even more to cleanse and revitalise the air we breathe. NASA found that plant leaves and roots and soil bacteria work together to take in airborne pollutants, process them and then release clean air. As well, living plants release moisture, providing a natural means of maintaining correct humidity levels.

