

Work makes you sick

If atmosphere in the office is suffocating — buy a plant

YOUR concrete, glass and plastic office may share a common problem with a NASA spacecraft hurtling through the heavens.

The air circulating through each contains hundreds of invisible chemicals.

And they can make you sick. In some cases, very sick.

Indoor air pollution, colloquialised to "sick building syndrome" because of its harm to occupants' health, will radically alter the way buildings are constructed, predicts former NASA scientist Dr Bill Wolverton.

Yet despite its multi-billion dollar cost through sick leave and health problems, the answer to indoor air pollution may be as simple as the pot plant next to your desk.

Dr Wolverton is a world leader in the use of plants to combat and disperse a wide variety of pollutants.

He has developed systems where common indoor plants, such as potted palms, filter out most of the harmful chemicals and pollutants in an office. He travels the world preaching the benefits of his biotechnology.

Dr Wolverton became aware of the problem while working for NASA in the early '70s when the ill-fated NASA space station Skylab was circling the globe.

"A spacecraft is constructed from synthetic materials, which are made of chemicals, and all synthetic materials give off vapors which contain these chemicals," he said.

"Because the craft is a sealed environment, these chemicals just recirculate and build up as there's nowhere else to go — and they can be very detrimental to health.

By MALCOLM HOLLAND

"We identified about 300 of these chemicals, called Volatile Organic Compounds (VOCs), in Skylab.

"A modern energy-efficient building is also virtually sealed up and has its atmosphere recirculated and it is mainly constructed from, and furnished with, synthetic materials.

"Studies have shown the same high levels of VOCs in modern energy-efficient buildings, with a retirement home complex in America identified as having hundreds more

VOCs than even Skylab."

Dr Wolverton began researching ways of filtering or cleaning these potentially harmful invisible nasties swirling around the interiors of spacecraft.

"The answer turned out to be so simple.

'PLANTS — through their natural breathing and also through their root systems and micro-organisms attached to the roots — are natural filters," he said.

But sick building syn-

drome and indoor air pollution were still treated as, at best, something on the scientific fringe, at worst New Age hypochondria, by governments and industry.

The warnings Dr Wolverton has delivered for more than a decade finally became unavoidable late last year with the presentation of a massive report on indoor air pollution by the US Environmental Protection Agency to the US Congress in Washington.

"It said sick building syndrome is for real, it's not a myth, it's a real problem," he said.

"In fact they found indoor pollution is a greater problem than outdoor pollution for many people, and there were up to 100 times more chance of being sick from indoor pollution compared to outside pollution.

"It said the costs through sickness have to be measured in the hundreds of billions of dollars."

The illnesses attributed to indoor pollution included respiratory infections, allergies, skin complaints, headaches and eye irritations.

The EPA report came as

developed countries across the globe became aware of the magnitude of the problem.

Scientists found one building in North Sydney lost an additional \$3 million to \$4 million a year through sick leave because of respiratory problems compared to other nearby office buildings.

In Los Angeles, a building contained so many VOC toxins investigators said it would be healthier for its workers to set up their desks beside a multi-lane freeway.

In litigation-mad America the EPA report has building owners, corpora-

tions, engineers and construction companies suddenly trembling.

"They realised if it was now accepted, they could be liable to be sued by a worker who became ill because of the building's atmosphere," Dr Wolverton said.

In Australia the building industry is also treating the problem seriously, with Dr Wolverton speaking at a Building Owners and Managers Association of Australia seminar on indoor air quality in Sydney yesterday.

But despite his conservative suit, tie and spectacles appearance, and his academic background, Dr Wolverton has been dismissed as a hippy in disguise by sections of the health and engineering establishments.

"I get the reaction all the time that it's just hippy 'Get back to nature, talk to a plant' stuff," he said.

'YES, some of the ideals are there, but this is not just an emotional movement; I am a realist, an engineer, a microbiologist and a chemist.

"Some say it's all in the head, people are sick of the modern work environment, not because of it.

"But the fact is the more plants you put in a building, the healthier a place it is to be."

Dr Wolverton said under his systems plants were placed in strategic areas of an office, such as where people smoke, or photocopiers are located, with fans directing the polluted air to the plants for filtration.

"Or you can go the big way and have huge atriums full of plants looking like mini jungles designed within the building."



Dr Bill Wolverton: plants offer a pure cure for those afflicted by sick building syndrome

New World sounds that curbed a cultural cringe

CULTURAL cringe was the by-word in American artistic circles even as late as the beginning of the century.

The Americans' artistic inspiration came from the old ways of Europe.

That the cringe gave way to recognition of their own uniqueness is in some part attributable to the music of Randall Thompson, Aaron Copeland and Samuel Barber.

The trio, all born around the turn of the century, form the basis of the second of the Sydney Philharmonia Motet Choir's Bravura series.

Called The New World, it will be performed at St Stephen's Church opposite Parliament House in Maquarie St on Sunday at 3pm.

Opportunity

Thompson's scappella work, The Peaceable Kingdom, combines a Biblical mood with the theme of America — a new land of opportunity and religious freedom.

Copeland's In The Beginning is based on the Book of Genesis and illustrates light, sea, land and all living things with music that has American jazz and folk as its roots.

The choir goes into full flight with the works of Barber. He re-arranged one of his most popular compositions,

MUSIC NOTES with JENNY DILLON

Adagio for Strings, into a piece for voices called Agnus Dei.

The choir will also perform several of Barber's solo songs with texts taken from Irish writer James Joyce, American poetry and the Bible.

Meanwhile, turn of the century Europe was undergoing a form of cultural rebellion influenced by Vienna's great composer Gustav Mahler.

Throughout July and August, the ABC has organised a Festival of Mahler, Vienna and the 20th century, a comprehensive retrospective of Europe with its political ferment and cultural expressionism.

The Australian Opera's contribution is its performances of Kalman's Gipsy Princess.

And from the Australian Chamber Orchestra there will be concerts on July 27 and 28 at the Sydney Opera House.

Yet to come is Berg's opera Lulu, for which former leading Australian opera soprano Jennifer McGregor returns to this country to sing the title role.

Concerts will start with Arnold Schoenberg's arrangement of Johann Strauss's Roses From The South, to be followed by Richard Strauss' expressive Metamorphosen for 23 solo strings.



Former leading Australian opera soprano Jennifer McGregor who returns to this country to sing the title role in Berg's opera Lulu