

New home for air-sampling station

An artist's impression of the new building.

A new home is being built on a windswept cliff-top for scientific instruments that for 4 years have been keeping an eye on the quality of our atmosphere.

The equipment samples the air at Cape Grim, on the north-western corner of Tasmania. Until now it has had temporary quarters in a van that originally came from Canberra, where it housed instruments assisting in the NASA Apollo space program.

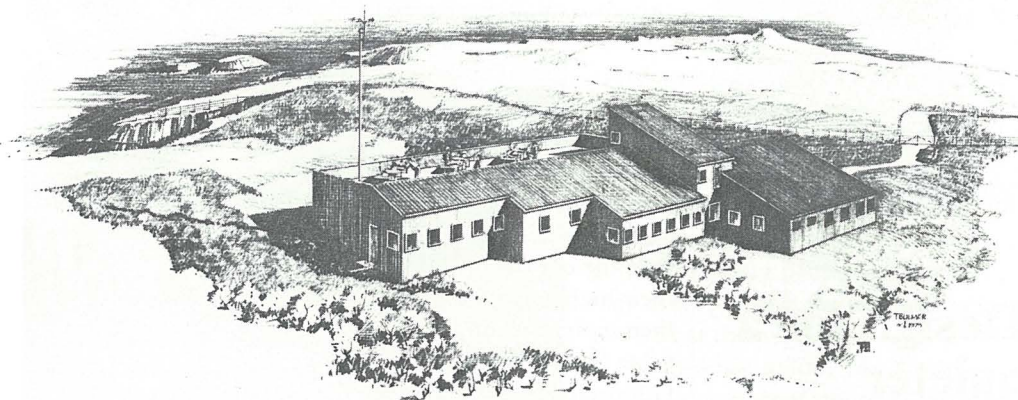
The new building, costing about \$1m, is due to open in late October or early November. It is owned by the Commonwealth Department of Science and the Environment, which runs the air-sampling program jointly with the CSIRO Divisions of Atmospheric Physics and Cloud Physics.

Inside are two laboratories and a mini-computer, as well as an office and facilities for occasional overnight visitors. The computer automatically tests and calibrates the monitoring instruments and records their measurements. It will also carry out some analyses of the information it stores.

In addition, the building contains a small workshop and an emergency power supply.

At present the Cape Grim station is staffed by two technicians who travel to the van each day from Smithton, about 40 km away. The team is being enlarged to five, including a station director and a senior computer technician. The staff will continue to be based at Smithton.

Cape Grim has a rugged, unspoilt beauty that the new building's designers have taken pains to preserve. The station 'burrows' into the ground, with the highest part



of its roof just level with the top of the cliff. The outside walls are of untreated local pine, and all the meteorological and sampling instruments are served by a single 10-m mast.

The full title for the site is Australian Baseline Air Pollution Station. Its purpose is to analyse the air well away from cities and other sources of local pollution — in other words, the air that makes up the vast bulk of the atmosphere. From this analysis scientists can detect changes in the concentrations of substances in the air (see *Ecos* 13).

Cape Grim was chosen because, for about 60% of the time, the wind blows from the west or south-west, crossing thousands of kilometres of ocean before reaching Tasmania.

There are five baseline stations in the world, distributed more or less evenly from pole to pole: in Alaska, Hawaii, American Samoa, Tasmania, and at the South Pole. The four outside Australia are operated by the United States National Oceanic and Atmospheric Administration.

These stations continuously monitor the background or 'baseline' levels of solar radiation, a variety of gases, and air-borne particles. The gases include freons, which are released



from many aerosol cans and which can destroy ozone in the upper atmosphere. This is important, as ozone forms a protective shield against cancer-causing ultraviolet radiation.

Carbon dioxide is also measured, to provide information that will be essential if we are to understand the influence of this gas on our climate. The atmospheric concentration of carbon dioxide is gradually

rising, partly because of Man's combustion of fossil fuels.

In an attempt to integrate scientists' present knowledge and stimulate nationally coordinated research into this question, the Australian Academy of Science and CSIRO are convening a symposium entitled 'The Carbon Dioxide-Climate Problem', to be held in Canberra on 16-18 September.

Coping with heat stress

Ecos (February 1980) contained an article on personal comfort in Australia with particular reference to climate.

Apart from giving the totally erroneous impression that here in Tasmania at 3 p.m. on an average January day one is more likely than not to be subject to 'cold stress', the basis of a 'naked person standing outdoors facing north' is, to say the least, somewhat unrealistic! As was correctly stated, '... if enough clothes can be freely discarded, enough heat can be lost by sweating to allow all but the most strenuous of activities ... Often



When in Rome ...

of course, sweating is impeded by custom...'

The fact is that by custom we are not allowed that most obvious, easy, natural, and common sense solution to the problem of heat stress—to be naked (whether out of doors, facing north, or whatever). Indeed, unless one is a woman, not only is nakedness forbidden but by custom those very parts of the body from which sweating is most desirable (and unavoidable) for comfort are those which we are obliged most tightly to truss up into bundles of discomfort.

The most logical covering (if covering

of any kind is really necessary—for protection from sunburn, perhaps) in a situation where one is liable to be subject to heat stress is the sort of flimsy, flowing garment currently permitted only to females. The contemporarily customary obligation on males to be always (for business anyway) collared, sleeved, (even if short), and tied in around the waist, and to subject their highly sensitive lower regions to so much complicated wrapping up in shorts and tight-fitting underwear—to say nothing of the idiocy of completing the uniform with long socks and shoes—is little short of lunacy.

Clothing is one fact of modern life which concerns us, quite literally, more closely than any other, and has more effect on our personal comfort and the creation of that mini-environment which we carry around with us wherever we go. And yet it is also the one product of mankind most closely prescribed both by law and custom, and over the design and choice of which the individual (male) has the least control for his personal use. Why?

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