

# Industry switches into efficiency mode

By Stephen Gibbs  
and Kylie Keogh

## Sunshine brings big savings for office block

By Stephen Gibbs

A RECORD number of entries has cemented the 1993 National Energy Awards as the highest profile recognition of energy efficiency in Australia.

The 14th annual awards, organised by the Department of Primary Industries and Energy, were presented to the country's six most efficient users of energy by Senator Nick Sherry on behalf of the Minister for Primary Industries and Energy, Mr Crean, last night at the Hotel Windsor in Melbourne.

The National Energy Awards are promoted by 19 professional and industry associations as the premier recognition of outstanding achievement in the efficient production, conversion and use of energy.

Senator Sherry said in his address that efficient energy use was not a gain restricted to the energy sector, but an encouraging step forward for Australia's performance as a whole.

International competitiveness, increased export activity and boosted employment opportunities are the broader objectives which stem from efficient energy practices and Senator Sherry said it will lead to the improvement in the balance of payments.

"It will improve our balance of payments and generate the financial and other resources which can be directed to our social and environmental roles," he said.

"At the end of the day we all recognise that these are essential if we achieve annual improvements and living standards and measurable gains in the quality of our lives, both of which are encapsulated in the concept of an ecologically sustainable pattern of growth and development."

A record 68 entries in this year's awards illustrated an improvement by industry and business in energy management practices, with corporate giants and smaller businesses introducing effective technology to reduce costs and become more competitive.

Companies which have been using energy in an environmentally responsible way are recognised in the awards in order to focus public attention on energy supply and use and the way it is being addressed.

Senator Sherry said the crux of the awards was to recognise publicly research and innovation in various areas of the energy sector which displayed how to tap energy efficiency potential, how to make big savings

PERTH'S Solar Energy Information Centre was constructed for the cost of a conventional office block but uses 69 per cent less energy.

Five years after its completion, the only privately run organisation in Australia to provide an information service to the public about solar energy in buildings entered and won the building category of the 1993 National Energy Awards.

The centre was developed as a demonstration of what could be achieved with solar power and in 1990 became the first building to be given an Australian Design Award for its innovative use of local products and inventions.

The architect of the two-storey centre in South Perth, Mr Garry Baverstock, set out to prove a solar building could achieve substantial energy and financial savings without sacrificing human comfort.

Mr Baverstock sought to minimise the use of electricity by using direct solar energy in winter and indirect evaporative cooling for summer.

The 1000sq m building has solar air heaters, low wattage lights with high-tech reflectors and is computer-controlled to enable it to respond to temperature changes by operating venting and air-cooling systems automatically.

On cloudy days the building re-emits its stored heat to the interior, while the use of lightweight, insulating concrete in the southern wall of the structure contributes to the thermal efficiency of the building.

The building runs south-east, north-west and a large solar air collector on the north-east facing roof delivers warm air to the centre's air-conditioning system.

Mr Baverstock said the off-north orientation was beneficial for offices where heating demand occurred almost entirely in the mornings.

The inner and southern office areas are illuminated by sloping skylights, eliminating the need for any



Let the sunshine in: Mr Baverstock demonstrates the louvre designed windows that allow in the light — Picture: Ken Matts

artificial lighting on the top floor on sunny days.

All windows are shaded with slotted awnings, allowing light to be reflected upwards through the glass to illuminate the ceiling. Artificial lighting is reduced and maximum views are retained without attracting unnecessary summer heat.

A Dricon air-conditioning system avoids increasing humidity by excluding water from the air delivery

system and the building is vented during the night to exhaust warm air.

Up to 25 air changes take place every hour to combat Perth's common 20C night summer temperatures.

Mr Baverstock said venting reduced the next day's air-conditioning and could cut energy bills by 25 per cent. Exposed concrete slabs and

solid concrete office partitions help the night cooling process.

While a conventional Perth building uses \$22 a square metre in energy each year, the Solar Energy Centre costs about \$7 a square metre.

"The widespread adoption of this design philosophy would have a significant effect on electricity consumption," Mr Baverstock said.

"The major effect would be a

reduction in peak loading in the day.

"The Solar Energy Information Centre has created a market for architects, designers, engineers and builders for low-energy solar-designed buildings through its demonstration and education activities.

"And it has provided a focal point and lobby group to governments for the associated industries and professions."

# Solar centre tops for energy conservation

By KIRSTEN STONEY

SOUTH Perth's Solar Energy Information Centre building practises what it preaches — energy conservation.

With annual energy costs of about \$7 a sqm — 70 per cent less than a conventional building — the Canning Highway structure is Australia's most energy-efficient property.

The building's substantial energy and financial savings last week won it The National Energy Award (building category).

It was the first time a WA property has won the award, according to architect Garry Baverstock, who designed the information centre.

The centre, built in 1989, minimises its electricity consumption by using direct solar energy to heat the building in winter and an indirect evaporative cooling system to lower the temperature in the summer months.

It has solar air heaters, skylights, reflective blinds and awnings.

In addition it uses low-watt lights with high-tech reflectors and an air conditioning system that does not need water.

"It's innovative," Mr Baverstock said.

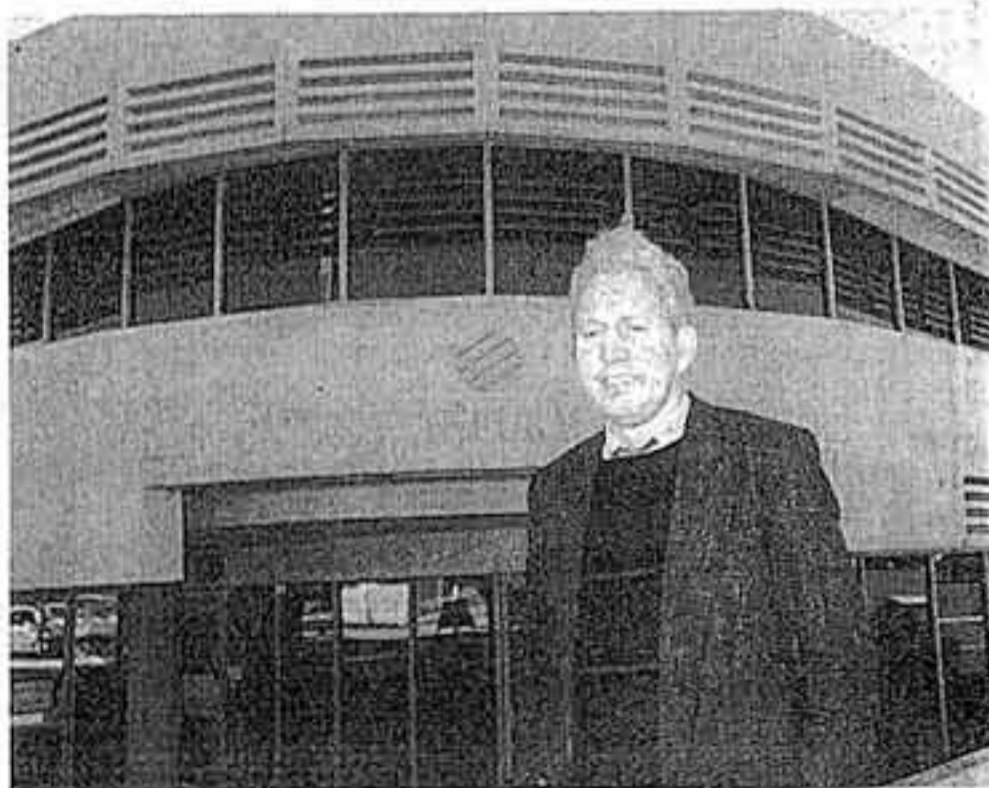
"Solar air collectors collect air heated by the sun which we use in winter to heat the building.

"The night cooling system exhausts hot air from the day into the cool night. Ventilating the building at night reduces heat loads."

In 1990 the centre won an Australian Design Award.

Mr Baverstock said the building's electricity costs equated to \$7/sqm, which was an annual saving of between \$15,000 and \$20,000.

"Some of the high-rise CBD buildings covered in glass cost up to \$60 and \$70/sqm annually to run," he said.



DESIGN AWARD: Garry Baverstock takes pride in the Solar Energy Centre, South Perth — one of his building designs

"There's significantly less energy used in this building.

"The benefit is it is all fresh air — a healthy benefit — and it doesn't cost money.

"It is the most energy-efficient building in Australia by far."

Senator Nick Sherry, who presented the award in Melbourne last week, said the Solar Energy Information Centre had

consistently demonstrated that a passive solar building could achieve energy and financial savings without sacrificing comfort.

The National Energy Awards began in 1980 to recognise energy management in commerce and industry.

They aim to focus public attention on energy challenges facing Australia.



Garry Baverstock wants government action on solar energy development.

## Hot tips on energy from award winner

WA is missing the boat in the development of solar energy, according to national solar energy award winner Garry Baverstock.

"The result is that the community is losing out on the creation of hundreds of jobs and millions of export dollars," he said.

"It simply needs the government and local authorities to support the concept and encourage residents to think solar.

"One effective way would be for the government to create a level playing field that required all energy producers to pay for the cost of their environmental damage.

"It is this occurred, solar and windpower would win by a mile."

Mr Baverstock said WA had the perfect con-

ditions to develop a multimillion-dollar domestic and export industry, and South-East Asia and the Middle East were waiting markets.

"Perth in the 1960s and 1970s had a global edge on solar hot-water heaters and research being conducted by the then WA Institute of Technology at Bentley," he said.

"But now, even the state of Victoria spends four times more on solar research than we do."

Mr Baverstock, a resident and practising architect in South Perth, has devoted the past 20 years to promoting solar energy in buildings.

He won his recent Federal Department of Energy award for his solar-designed, energy-efficient Solar Energy Centre, built in 1989 in Canning Highway, South Perth.

The building includes WA's only public solar-energy information office, conceived and strongly backed by Mr Baverstock and the Solar Energy Society.

Mr Baverstock said that if the government and local councils provided more research, development and consumer incentive, local solar hot-water system manufacturers could afford to develop low-cost appliances to suit most nations.

But at present these local companies were starved of research capital and markets and were forced to develop and sell only one type of system to the world.

"The current solar-energy thinking in WA is a waste of resources which hold the state's progress back," Mr Baverstock said.