PERTH FIRM BOOSTS LOW ENERGY HOUSING CONCEPT

A small low-profile Western Australian firm has developed its interest in low-energy housing to place it as the leader in solar housing desing in this state.

In the 1985 Housing Industry Association Home of the Year competition, Techoprojects, with their Bristule Solar Ideas Home at Sommerville Estate in Kardinya, won the award for the Design for Climate Award.

One of the company's latest projects intorduces the new science of retrofitting or recycling of a run-down uneconomical office building to make the bulding energy efficient.

Five years ago Perth architect Mr Garry Baverstock deepened his interest in solar housing and today heads up this fledgling firm, Techoprojects, as managing director.

During the past two years Techoprojects has designed, analysed and built more than 30 solar houses in W.A.

Mr Baverstock is the leader of a team of experts providing a comprehensive design consulting service, with solar energy and energy conservation in building design becoming the firm's speciality.

Mr Baverstock told Building W.A. that Techoprojects was expanded in 1982 to include a number of specialists including physicists Dr K. Lawrance, mechanical engineer Mr Andrew Crabtree and solar design pioneer Mr Ron Brown.

Since then the firm had been involved extensively in some of the most advanced research and development work in the solar field.

One project involved a Commonwealth grant for research into solar housing industry products.

Another, a SERIWA grant, involved the design, compilation and production of a manual for the Solar Housing industry in Australia.

Mr Braverstock said that another involvement has been a Forest Products Association project which included investigation into incorporating timber in the firm's solar products.

Low energy building construction has been a major development for the firm with work on numerous office buildings, commercial developments and home units incorporating low energy principles where practicable.

Mr Baverstock has also developed two computer programmes - one for solar and heat load analysis and the other - a cost budgeting and D.C.F. analysis of chosen systems programme.

He said that incorporation of the firm's ideas and expertise into building projects will often save substantial capital outlay and results in large savings on running cost and energy accounts.

Mr Baverstock said that firm offered the services of computer analysis of thermal loads, system sizing and economic viability.

SOLAR HOME PROJECT BY TECHOPROJECTS IN PROGRESS

Design reports recommending changes to improve the energy efficiency of architectural designs, technical advice on detailing and specification of solar technology with provision of information for contract administration, inspection service during construction, and comprehensive professional service for the design of documentation on building projects are also part of the service offered by Techoprojects.

Mr Baverstock said that 50 per cent of new housing is for rural areas, mainly farmers who have been very receptive to the solar housing principle.

"A passive solar house would cost only about five per cent more in Perth than convertional housing."

"In fact, up to 75 per cent of work put into designing and constructing a solar house is done at no extra costs," he said.

"However, only 0.01 per cent of all houses built in Australia are low energy solar design, compared with about 8 per cent in the United States, most of them in the State of New Mexico," Mr Baverstock said.

There are only about 10 architects in Perth now concentrating on solar housing design.

In his firm's case, it is a multi-discipline practice combining the expertise of a physicist, a chemical engineer, a mechanical engineer, a solar hot water specialist, an architect and other architectural specialists.

"Our objective is for an all round approach for solar energy and low energy principles with the end result of about 80 per cent energy conservation being utilised in any building design," Mr Baverstock said.

Mr Baverstock is currently putting the finishing touches to a booklet on data for designing houses throughout Australia describing all facets of low energy building design.

The architectural work in Techoprojects is now concentrating almost 100 per cent on solar energy efficiency.

In research and development, the firm is studying products designed for solar energy housing, this now being subsidised by an Industrial Research and Development grant scheme.

For the past three years Techoprojects have been designing and developing new solar products for manufacture.

These proved products are then incorporated in the firm's own style of architecture.

Techoprojects latest retrofitting contract on the Adelaide Terrace office building includes the preparation of an energy report on running costs pointing out the real economic viability of the building.

This is done to determine the necessary extra capital outlay to rejuvenate the building as an investment.

The building has for some years been costing its owners considerable money and has become progressively less attractive to existing and potential lessees.

Techprojects teamwork allows a careful examination of the building envelope involving the complete evaluation of the insulation, shading transmission of heat, areas of glass, etc.

The expert team also examines and evaluates the effectiveness or otherwise of the building's interior for balancing, upgrading and fine-tuning of mechanical systems for heating and cooling.

In the Adelaide Terrace property, the final plan involves incorporating innovative ideas including the removal of ceiling and relocating services through the floor.

This will expose the thermal mass and increase the air volume through a higher ceiling aided by using a night ventilation system during summer to keep the building suitably cool during hot weather periods.

Techoprojects is doing a case study, documenting its retrofitting concept for many Perth buildings with the aim of promoting its expertise.

Mr Baverstock said that techoprojects was the only fully professional consultancy organisation in Australia in the commercial property and construction design industry.

TRAPPING SOLAR ENERGY FOR GREENHOUSE