

The Asian Institute of Technology celebrates its 20th anniversary this year. David Bousfield and Ziauddin Sardar have visited it recently and have returned with different views on the impact it is making on the regional development of Asia. Here they discuss their impressions.

Could AIT be a model for the Third World . . .

THE role science and technology should play in developing countries may well be epitomised by the approach adopted by the Asian Institute of Technology (AIT) situated in Thailand about 40 Km north of Bangkok.

More than half the world's population live in the countries served by the AIT and for the past twenty years it has been gradually building up scientific and technological knowhow in the developing nations of the East. The recent UNCSTD conferences left many scientists confused as to the role they could and should play in aiding development in the Third World — the example set by AIT may help them and their governments to see a way to help.

The Asian Institute of Technology started life in 1959 as the South East Asian Treaty Organisation (SEATO) Graduate School of Engineering — the brain child of Pote Sarasin, the first Secretary General of SEATO, and a former Prime Minister of Thailand. Intended to provide a source of highly qualified engineers for Asian projects, the school began as a small collection of rooms in the Engineering Faculty of Chulalongkorn University deep in the heart of Bangkok. But it grew rapidly and in 1967 became autonomous from SEATO. Six years later it moved to its present rural setting in a 400 acre campus donated by the Thai government.

Educationally the main emphasis is on a five term master's degree in engineering or science, but PhD's are also an important part of the range of qualifications AIT can offer. At present the institute has 500 students and 62 full-time teaching and research staff. In both cases the range of nationalities is huge but most students are from Thailand itself or neighbouring countries such as Malaysia, the Philippines, Pakistan, India and Bangladesh. 60% of students who receive an AIT qualification return to their own countries to work in industry, government or universities. The institute clearly supplies a 'local' need.

Recently AIT has been gradually shifting from a strict commitment to infrastructural engineering to new fields which directly contribute to the process of national development in a Third World context. Areas such as food production, resources management, rural, industrial and urban development have become major concerns. The Divisions of Human Settlements is particularly active in this area and I spoke to Paul Vorrattchaiphon, a research associate, about one of the division's main interests, the Building Together Project.

The continual migration of rural folk to

urban areas creates many problems for developing countries. To house people properly will require considerable changes in current low-income housing policy and, consequently, research into developing appropriate low-cost housing technology is needed. AIT is currently supervising a slum resettlement programme involving the rehousing of 180 families at Lad Phrao on the outskirts of Bangkok. The initial land purchase, development and coordination was financed by 'Brot für die Welt', a German organisation, and SELAVIP, a 'popular' housing service based in Chile. By mortgaging the land and completed houses to the Thai National Housing Bank this initial 'seed' money should be sufficient to finance in serial fashion many similar projects.

The main structure of the houses is formed by special interlocking lightweight construction blocks designed by AIT and made from a rice husk aggregate in a cement and sand mix produced on site. The prospective owners, working in groups on clusters of 16-20 houses, manufacturing all the component parts themselves. Each group is broken down into teams making joists, doors, piles or casements, etc. Seventeen weeks of part-time work are required from start to finish and by this time many of the previously unskilled owners have learnt their first trade. It is hoped that this will provide some of them with a new source of income and give a better sense of purpose and cohesion to the community.

Other AIT projects include the development of a system using composted human and animal waste as a nutrient source for freshwater algae and, ultimately, fish such as *Tilapia*.

I also spoke to Robert Exell, Associate Director of the Division of Energy

Technology. Renewable energy resources are another important focus for AIT's research activities. Drying of crops, fish and meat are all long known applications of solar energy and one recent development is a solar powered rice dryer. This simple device draws air heated by the sun through a closed drying compartment containing the grains. These are protected from the rain by plastic sheeting on a bamboo framework. Half a ton of paddy rice can be dried in one to three days.

The same group has also developed a solar powered refrigerator for storing labile medical supplies in remote areas. AIT, however, hopes that the unit can also be made to provide a source of income for these communities. For example, it could be used to preserve commercially grown flowers during the critical period between cutting and refrigerated export to Hong Kong. AIT is currently collaborating with a local university project aimed at introducing this refrigerator and flower culture into the economies of primitive hill tribes in the north.

I spent a day on the AIT campus and only managed to visit two research wings. In fact the institute has nine teaching and research divisions, these being agricultural and food engineering, computer applications, environmental engineering, geotechnical and transport engineering, human settlements development, industrial engineering and construction, water resources engineering and, the most recent addition, energy technology. Also, the institute is the home of the South East Asian regional computer centre, one of the best engineering libraries in South East Asia, a language and media centre (the language used by the institute is English) and the Regional Documentation Centre.

David Bousfield



AIT's low-cost, appropriate housing for slum resettlement