

The recommendations of the Karachi Conference of Universal, Free and Compulsory Education of 1960 began to put some figures on the vast numbers of school children to be educated in Asia. The 1962 London conference on educational buildings provided UNESCO with some important advice on just how to go about helping governments to provide suitable accommodations. UNESCO efforts to turn the printed resolutions into classrooms and school desks has now spanned a quarter of a century and its centre of action can be traced from Bandung, Indonesia, to Colombo Sri Lanka and finally to the UNESCO Regional Office in Bangkok Thailand.

In the original mandate, UNESCO was to concentrate on research on primary school building where the needs were the greatest. Throughout much of Asia, in those days, the numbers of primary school buildings were far too few to accommodate the large numbers of school age children. If the governments were to copy the best of the existing school buildings in the countries concerned they would have had to carry out the construction programme with funds which were sorely needed for teachers' salaries, school textbooks, visual aids and science equipment.

Thus from the very beginning of UNESCO's work in school buildings in Asia, the matter of cost was a preoccupation. The London conference had however warned UNESCO strongly against dishing out to the region simplistic solutions of cheap buildings using standardized plans. Instead 'Research and development' through team work by designers, cost specialists and educationists, was the cry of the day. Consequently the UNESCO supported Asian Regional Institute for School Building Research (ARISBR) set out in earnest to get countries to think creatively about their own building and furniture needs rather than to copy 'cook-book' solutions.

Fundamental research was undertaken in determining average body sizes for Asian children, optimizing hearing conditions in open hall classrooms and accurately calculating the amount of nat-

tural light available in the sky. Applied research concentrated on arranging spaces in such a way as to make teaching more efficient and learning more effective.

The knotty problem of lowering costs so that new schools could be afforded by even the poorest countries was raised in every one of the studies. Finding out that Asian children were smaller than European and North American children meant that chairs and desks needed to be smaller to be comfortable and as a bonus this saved valuable timber. Careful study in full scale situations revealed that a substantial amount of space in classrooms was not being used and therefore need not be built (At that time furniture and building standards in many Asian countries were simply copied from those of highly developed countries). Improving hearing conditions in open hall schools again reduced the need for costly partitions, but more important-

ly made it possible to easily 'adjust' the sizes of classrooms so that they could reflect closely varied class sizes which might be 80 in grade I and eight in grade V. This too reduced the required floor area of school buildings.

One monumental undertaking was the secondary school costs study, where 100 secondary schools in 14 countries (five of them in Asia) around the world were analyzed in great detail to determine how the resources were being used and to identify where savings could be made. The main conclusion of this study

was that the greatest potential savings would be through increasing the utilization of existing spaces. In many schools the simple rearrangement of the timetable to a 'subject based' system from a 'class based' one could double the school's enrolment. It was also found that verandahs and covered walk ways accounted for a significant amount of the total space of the schools and yet they contributed nothing to improved teaching or learning. The use of cheaper building materials and adoption of new construction techniques was also investigated and further potential savings identified.

Research was certainly not the only concern of ARISBR. Group training and advisory services to the Member States of the region filled out the activities and all work was meticulously written up and disseminated.

In 1972 when the first ten years of UNESCO's work in the field was coming to a close a major publication was prepared. This book, School Building Design Asia, summarizes the work of ARISBR which had resided for two years in Indonesia and seven in Sri Lanka. To this day, the book is used throughout the region as the most basic and comprehensive reference work available on the design of both primary and secondary schools.

The following year saw a major redirection of UNESCO's efforts in educational buildings. Resources for



Village schools are needed for Bangladesh's growing rural population.

tially and the staff reduced in numbers. However, by bringing the nucleus of the UNESCO team to the Regional Office for Education in Asia (later Asia and the Pacific), the educational building design specialists were placed side by side with teacher educators and educational planners together with the existing staff who had competencies in educational research, curriculum development and documentation.

In this new environment, emphasis was placed on helping Member States to apply the results of research. Rather than holding training sessions aimed at providing a broad knowledge of the field to classes of trainees brought together from a number of countries, the new direction was to provide tutored, in-service training of national personnel. Trained persons who had already attended training courses were brought to the UNESCO Regional Office where they could work through a project which was linked to major educational policy reforms in their countries.

The evolution in the team's work followed the change in environment. In place of the research laboratory environment of the old fair building in Colombo they worked in a modern office environment. No longer could professional theories be resolved by calling the carpenter over to build a full-scale mock up of a furnished classroom nor could they build a classroom exterior wall which provided

security at night and tiled up during the day to become a sunscreen. To make up for this separation from 'hands-on' research the new Educational Facilities Development Service of UNESCO Bangkok began to spend much of its staff time in the field working shoulder to shoulder with professional colleagues who had completed the in-service training and were now struggling with turning plans and reports into large numbers of buildings desks and chairs.

There was, however, some continued concern with research. Some centred on security's; how to make educational buildings safe from fire, earthquakes, hurricanes floods — and design mistakes which lead to accidents when schools are in use. Other research has been done on making better use of outdoor spaces for teaching ecological demonstration, playgrounds and sport.

These 25 years have been the development of large and effective school buildings organizations which have, in a number of countries, been able to close in on the targets set in Karachi. In other places work is achieved through co-operation between the Ministry of Education and other organizations such as public works, local government or the communities themselves. Their work has been facilitated through the substantial assistance received from multilateral and bilateral sources.

Looking across the region

one can see that about half the governments of the region working directly in co-operation with UNESCO have been able to substantially improve the cost effectiveness of their educational buildings and furniture. Several million children work daily in these new schools in Iran, Afghanistan, India, Maldives, Sri Lanka, Bangladesh, Nepal, Burma, Bhutan, Thailand, Lao Viet Nam, Indonesia, Philippines and Tonga. Almost all other Member States of the region have benefited from training or the application of ideas contained in the publications.

A fresh round of research and development work is just getting under way in some 17 countries which are participating in a new project known as Development of Educational Facilities in Asia and the Pacific. This project is an extension of UNESCO's normal work under the regular programme but is financed by an external donor, AGFUND. The aim of the project is for countries to develop prototypes which will be followed by massive construction programmes. By now the countries have sufficiently developed their own capacities to carry out these experimental projects with a minimum of intervention from UNESCO. The UNESCO-AGFUND assistance is being used to cover unusual research cost, visitations to other countries carrying out similar work and in some cases, external consultants. The regional office supporting team finds itself doing less drawing these days but rather making increasing use of a personal computer.

Some of the problems touched upon by the Karachi conference are still with the region. This can be seen by the number of countries which are preparing prototypes for improved, low-cost primary schools. Others are harbingers of the future — how to use computers to do a better and less costly job of planning, designing and constructing educational spaces; upgrading the standards of old physical facilities; and (who would have believed it in 1967) making use of surplus primary school space which is a by-product of effective family planning and consequent declining enrolments.