# ASIAN INSTITUTE OF TECHNOLOGY

The Southeast Asia Treaty Organization (SEATO)—formed under the leadership of the United States and comprising Australia, France, New Zealand, Pakistan, the Philippines, Thailand, and the United Kingdom—was organized in 1954 to defend Southeast Asia against communist attack or subversion. Often overlooked is the fact that it had a social agenda as well. The member nations also pledged themselves to promote higher living standards, economic prosperity, and social well-being in the region.

Of particular concern among SEATO and Asian leaders in the 1950s was the dearth of regional universities offering postgraduate degrees in the practical sciences. It was precisely such training that was needed to build an infrastructure for economic development and to modernize Asia's nascent industries. Bright students who qualified and could afford it studied abroad in the universities and technical institutes of Europe and North America. A great many of them subsequently found jobs in the West and stayed on, leaving their home countries bereft of needed talents and reinforcing Asia's dependency on foreign experts.

The idea for a remedy to this problem is usually credited to Pote Sarasin, a lawyer and diplomat who was Thailand's ambassador to the United States and the United Nations in the early 1950s, and later secretary general of SEATO. Sarasin suggested training engineers in Asia where their skills were required and where, it was hoped, they would remain.

After floating this idea among the SEATO ministers and being encouraged, he developed a prototype for such a school to be established on the campus of Chulalongkorn University in Bangkok where SEATO was headquartered. Sarasin had a unique opportunity to promote his plan when, following a coup d'etat in 1957, he was asked to serve as prime minister of Thailand pending new elections. During his few months in office Sarasin appointed the finance minister who secured Thai government funding for the proposed school. Estimates were then made of costs of personnel, buildings, technical equipment, and other requirements such as books and scholarships. Academic

standards and conditions for admission were agreed upon, as well as the initial course of instruction—hydraulic engineering, a skill that was badly needed in the monsoonal states of South and Southeast Asia.

Sarasin's proposal was formally approved in March 1958 by SEATO's Council of Ministers, which invited member governments to contribute financially.

At this point the U.S. representative at SEATO put Sarasin and his planners in touch with Thomas H. Evans, a retired U.S. army colonel and dean of the College of Engineering at Colorado State University, and Maurice L. Albertson, director of Colorado State University Research Foundation. With their help, Chulalongkorn University developed plans for the new engineering graduate school. Indeed, from this point forward, under a large grant from the U.S. International Cooperation Agency (which later became U.S. Aid for International Development, or USAID), Colorado State University played the dominant role in realizing Sarasin's dream, channeling the new school's core funding and recruiting most of its faculty.

In the months leading to the school's opening, the interim board of management under Sarasin met to address urgent problems ranging from academic policy to decisions concerning rooms and stairwells. In July 1959 the king of Thailand, Bhumibol Adulyadej, issued a royal decree establishing the SEATO Graduate School of Engineering, which would become better known by its acronym SEATOGSE. The opening ceremonies were held on 8 September 1959, with Prime Minister Field Marshall Sarit Thanarat as guest speaker. Two days later classes opened with eighteen students: thirteen were from Thailand, two from the Philippines, and one each from India, Pakistan, and the Republic of China (Taiwan).

Three of the school's original faculty were Thai, assigned to SEATOGSE by Chulalongkorn University; the other five were American, recruited by Colorado State. Evans became the first dean. During SEATOGSE's pioneering years, he established an atmosphere of rigorous discipline and enhanced the curriculum by adding courses in structural and highway engineering. Robert M. Holcomb, the second dean, chosen in 1961, would put a major emphasis on research.

Although the United States provided the lion's share of funding, other SEATO states made important contributions. Thailand, of course, hosted the school at Chulalongkorn, which officially conferred SEATOGSE degrees. Thailand also provided funds to construct and equip the new buildings. The United Kingdom contributed the school's first hydraulic

laboratory equipment, Australia provided scholarships, and the Philippines supplied nominal operating funds.

A central influence on the school's formation and early growth was Albertson. The Colorado State University Research Foundation that he headed was the primary contractor with the U.S. government for SEATOGSE's support, and Albertson was tireless in soliciting cooperation and assistance for the new institution. He visited the Bangkok campus annually and also made the rounds of each SEATO nation, soliciting support for SEATOGSE and seeing to it that promised funds were actually received. He personally recruited many of the early faculty. His official association with the institute continued through June 1975 when the U.S. government terminated direct support by USAID. In 1979 the institution honored him with an honorary doctorate in engineering.

Certain important features of the graduate school were determined in the beginning. Academic admission was to be pan-Asian and instruction would be in English. To ensure that the best potential students applied, SEATO established a generous scholarship program and extended it to students from Burma, Ceylon (Sri Lanka), India, Indonesia, Laos, Malaya (Malaysia), South Vietnam, and the then British colonies of Singapore, Sarawak, and North Borneo, as well as the SEATO nations of Thailand, Pakistan, and the Philippines. Although it took years for the school to achieve such diversity in its student body, pan-Asianism was an important part of the founders' vision.

English was the obvious choice for the medium of instruction because of the formative role played by Colorado State University engineers. Moreover, scientific knowledge was communicated throughout the world primarily in English, and English was the most widely known "second language" in Asia.

Most of the early applicants learned about SEATOGSE through their undergraduate engineering schools. Filipino Ricardo Pama, for example, a student who later joined the faculty and is now vice-president for academic affairs, remembers seeing a large poster advertising the program on the bulletin board of his alma mater, Mapua Institute of Technology. Pama was already working for the Philippine Department of Public Works and Highways, but he was curious enough about the new school to write a short letter to the dean. He received a response encouraging him to apply and mentioning the possibility of a scholarship. Pama became a member of SEATOGSE's fourth class; by that time the student body had expanded to nearly sixty. Academic rigor was the order of the day. About a third of the students failed to graduate because of the high standards set by the professors. Yet members of the faculty

went well beyond what was required of them. Pama remembers Robert B. Banks, an instructor who later became AIT president, offering advanced tutoring to his best students in the afternoons.

By the time Milton E. Bender became dean in 1963, the school offered three programs leading to a master's degree in engineering, possessed a library of more than ten thousand books and articles, and was expanding its curriculum to include courses in industrial operations and management.

Despite these signs of vitality, Bender faced a serious problem. The U.S. government indicated that American support for SEATOGSE was designed to get the school off the ground; it did not intend to subsidize it permanently.

In his January 1964 report to SEATOGSE's board of management, Bender pointed out that the school needed two kinds of financial support: first, guaranteed permanent financing at a level sufficient to meet salaries, scholarships, and general operating expenses; and second, one-time grants for buildings, equipment, and research. Only an endowment on the order of U.S.$10 million, he said, would guarantee the school's permanent financial viability. If this could be arranged, the SEATO Graduate School of Engineering he believed, could well become "a great educational institution."

The SEATO Council of Ministers convened the Expert Study Group —with one representative from each country—to explore the school's future. Two consultants, Dr. C. A. Hart from the United Kingdom, and Professor Wesley L. Orr of the University of California at Los Angeles, were hired to prepare background reports for the panel, which was chaired by Professor W. Fisher Cassie of the United Kingdom.

The consultants' reports revealed that in the short span of seven years SEATOGSE had already established its credibility within the region. After visiting Malaya, Pakistan, the Philippines, and Singapore, Hart wrote that among the hundred and more persons in the field whom he interviewed, "there was scarcely any person who was not conversant with the activities of SEATOGSE and all held the view that such an institution in the region should be encouraged." Orr concluded that SEATOGSE "is not just another ordinary school of engineering, it is a unique experiment in international cooperation in engineering education."

At the same time the panel pointed to unresolved issues, e.g., which countries was the institution designed to serve and what fields of study would best serve their interests? The report concluded that

the young engineering school should not only carry on its current programs but should expand. More importantly, it recommended that "there should be a gradual phasing out of the School from its present affiliation with SEATO."

The SEATO ministers concurred, and in April 1965 they adopted a formal resolution calling for the creation of a commission to prepare a charter for the school as an independent entity. Dean Bender was appointed chairman of the commission, whose members included D. J. Samuel, chair of SEATOGSE's board of management; Dr. Kamhaeng Balangkura, secretary general of Thailand's National Education Council; and faculty members Aroon Sorathesn, Rolf T. Skrinde, and John Hugh Jones.

The charter devised by the commission stipulated that the school should remain in Bangkok and possess an independent legal identity as a nonprofit organization. It should develop its own program in engineering and allied sciences, select its own students, and award its own degrees. The new institution, to be known as the ASIAN INSTITUTE OF TECHNOLOGY (AIT), should be guided by an international and self-perpetuating board of trustees.

The charter assumed that major funding for the new institute would come from a permanent endowment; indeed, securing such an endowment was to be the major function of the trustees. There remained a dilemma, however. Such funds could not be solicited successfully as long as the school remained within the aegis of SEATO, yet building a sufficient endowment would take time, perhaps years, and during that time it was essential that SEATO member governments "continue to assume a responsibility for financing the INSTITUTE."

With the charter in hand, Bender now set about securing a commitment to the proposal from SEATO states. AIT's current president, Alastair North, credits Bender with overcoming inertia and misunderstandings among the SEATO states and with "single-handedly" establishing AIT as a viable independent institution.

In June 1966 SEATO's foreign ministers adopted the proposed charter and formally obligated their respective governments to select trustees for the school—people who could "manage the financial affairs of the INSTITUTE and develop its financial standing." Meeting in Bangkok the following November, an interim board of trustees made three critical appointments: Dr. Puey Ungphakorn,* governor of the Bank of Thailand, was named interim chairman of the board and

*RMAF Awardee in Government Service, 1965.

Oscar Mapua, head of Mapua Institute of Technology in the Philippines, vice-chairman; Bender was chosen president of the institution and, as such, a crucial member of the board.

The creation of a board of trustees paved the way for the final step in establishing the ASIAN INSTITUTE OF TECHNOLOGY, i.e., chartering the INSTITUTE as an independent educational entity in Thailand, which required an act of parliament. This took another year, but on 26 October 1967 Thailand's Constituent Assembly passed the "Asian Institute of Technology Act," which was duly promulgated by the king on 30 November 1967. The act recognized AIT as "a juristic person deemed to be domiciled in Thailand"; exempted it from taxes and national codes governing education and from immigration regulations that would inhibit the comings and goings of the school's officers, staff, and students; and granted AIT the right to award master's and doctoral degrees in its own name. At the time AIT possessed a faculty of twenty-three professors and lecturers and a student body of 151.

As plans for AIT's independence from Chulalongkorn University moved ahead, Bender, Ungphakorn, and Assistant Dean Sorathesn began advocating the creation of a new campus, as the school was rapidly outgrowing the space allotted it at Chulalongkorn. The government was willing to provide a new site. Bender insisted the site be large enough to allow for growth. As it happened, a parcel of crown property in Pathumthani, just north of Bangkok, had been set aside for "Thammassat University and other schools." Inasmuch as Ungphakorn was rector of Thammassat at the time, he was able to arrange for 160 hectares of this parcel to be allocated to AIT, but several years would pass before the new campus opened. For the time being only the name on the gate of Chulalongkorn University was changed. Instruction went on much as before, but the generous allotment of land was an enormous vote of confidence in the INSTITUTE's future. Bender now used the fact of this gift in soliciting the large donations needed.

The United States did not, after all, abruptly abandon its financial support of the institution. Until 1975, U.S. financial support for the INSTITUTE actually increased and Colorado State continued to run the school on a contractual basis much as before. Nevertheless, the removal of AIT from SEATO made it possible for the school to achieve a more international and nonpartisan identity. Certain countries that had not been party to SEATO could now successfully be approached for assistance, e.g., Canada, Denmark, Japan, Taiwan, and West Germany.

In 1968 architectural and engineering firms commissioned by the British Ministry of Overseas Development drew up a long-range

development and construction program for the new Pathumthani campus, which AIT approved in January 1969. The United Kingdom also pledged to donate architectural and engineering services to the extent of U.S.$750,000 to design and build the first components of the complex. At the same meeting Ungphakorn announced the first fruits of the school's campaign to fund its ten-year development plan, to wit—a "commitment of U.S.$5.5 million by Thailand, the United Kingdom, the United States, and Australia." Bender saw in this commitment international recognition of AIT as a "challenging, far-sighted project, one that is not for tomorrow alone but for the next century as well."

Work on the new campus began in January 1971 as a multinational endeavor: the main academic building was contributed by the United States, the administration building by Australia, and a laboratory by Taiwan. Money for residences came from New Zealand and from the Lee Foundation of Singapore. On 14 February 1973 King Bhumibol officially opened the campus. President Bender spoke confidently of the institution's future, pointing out that "the ASIAN INSTITUTE OF TECHNOLOGY, as you see it today on this new campus, is well founded, adequately financed, has a nucleus of fine facilities, a well-qualified international faculty, and a truly regional, carefuily selected student body." Having accomplished his task of establishing AIT as an independent institution, he turned over the presidency to Dr. Harold E. Hoelscher of the University of Pittsburgh. Ungphakorn handed over his gavel as chairman of the board to Vice-Chairman Mapua.

Bender had been AIT's leader for a decade, first as dean and after 1967 as president. In partnership with Ungphakorn, Bender had succeeded in ensuring the survival of the institute, in establishing its independence both from SEATO and Chulalongkorn and in building the new campus. He had enhanced the school's visibility and status in the academic world and found it new government supporters, among them Japan, which had contributed a U.S.$2.5 million conference center.

Institution building was the hallmark of Bender's administration, but his dramatic success in that area did not overshadow advances in AIT's academic programs during the same years. Public health engineering had been introduced as a field of study in 1964, along with courses in river pollution control and industrial waste treatment; in 1968 these courses were expanded to create a separate division of environmental engineering. Meanwhile, in 1966 a new division was added in transportation and geotechnical engineering. Systems engineering was added in 1971.

In 1970 AIT had begun offering a doctorate in engineering and—at the other end of the academic scale—"diplomas" for students who

completed three trimesters of instruction in special fields. In 1972 AIT's curriculum was reorganized into formal divisions of engineering, each of which became a separate administrative unit. These were (1) environmental and chemical, (2) fluid and energy, (3) systems and management, (4) geotechnical, and (5) structural. A division of industrial engineering was added in 1973.

During President Hoelscher's two-year tenure (1973-75), AIT's computer services were updated to keep pace with advances elsewhere. To make this possible, the United States National Aeronautics and Space Administration gave AIT a CDC-3600 computer system. Subsequently, Hoelscher worked out an agreement between the INSTITUTE, USAID, and IBM World Trade Americas/Far East Corporation to establish a regional computer center on campus. The center opened in 1975 with the installation of an advanced IBM system. The same year an engineering laboratory, funded by Taiwan, was constructed. These additions enabled AIT to move aggressively into the field of contract research.

Despite the enormous momentum of the Bender years, and important new additions to the campus under Hoelscher, AIT had financial problems in the mid-1970s—a not unusual condition of funds not keeping pace with spending. AIT's faculty became alarmed. It presented its concerns to the board of trustees with the result that President Hoelscher resigned and Bender was asked to resume the presidency until confidence and financial stability were restored. Dr. Thanat Khoman of Thailand now became chairman of the board of trustees.

In the May 1975 graduation ceremonies, 143 students received degrees or diplomas, thereby swelling the ranks of AIT's graduates to nearly 2,000. At the ceremony AIT also awarded its first honorary degree—to King Bhumibol Adulyadej.

During his second term as president, Bender saw several capital projects completed and presided over yet another expansion of the curriculum. Agricultural and food engineering as well as human settlements development were now established as separate divisions. His main task, however, was to reassure AIT's funders of the viability of the institute and to prepare the way for new leadership. He succeeded in both. The Australian and Canadian governments agreed to guarantee funding for a period of three years in the amount of U.S.$2.8 million each. As Vice-President Pama recalls, "that was manna from heaven. . . . a tremendous morale booster for the faculty and for [other] donors as well."

Having turned the financial situation around, Bender, in January 1977, handed over the presidency to Dr. Robert Banks. Banks had taught hydraulic engineering at the school and had also served as director of research during its pioneering years; in 1976 the board invited him to return as vice-president and provost. His term as president, which lasted six and a half years, has been described by AIT's unofficial historian and longtime faculty member, John Hugh Jones, as "one of magnificent growth under quiet unassuming leadership."

Indeed, Banks's tenure is notable for expansion in all fields. Enrollment grew from less than four hundred to nearly six hundred students, and the faculty grew from fifty-three to eighty-nine full-time members. Innovations in the curriculum continued, with the upgrading of agricultural and food engineering to divisional status and the addition of divisions of computer applications and energy technology. The Asian Regional Remote Sensing Training Center was established as well as centers for foreign language training and continuing education.

Meanwhile, the campus sprouted new buildings as Banks shrewdly matched potential donors with AIT's growing needs. A "Resident Village" for students was funded by Thailand in 1977, followed by the "Australia Village" in 1978 and the "German Village" for married students in 1982. "Korea House," an octagonal student center donated by the Korea Traders Scholarship Foundation, was also completed in 1982. After the West German government built a new facility to house AIT's division of energy technology in 1980, France agreed to fund a second building, which was completed in 1983. Japan's presence on campus was highlighted dramatically with its donation of a U.S.$4.6 million library and media center, which officially opened in 1981. In 1984 Taiwan funded a U.S.$494,000 extension of the laboratory facilities at AIT's Regional Experimental Center.

Among Banks's innovations was seeking local currency contributions from regional nations—in contrast to those from industrial powers. Although relatively small, such donations were used to fund seminars, student research, and faculty exchanges in the area. In this way Bangladesh, India, Nepal, Pakistan, the Philippines, and Sri Lanka all made useful contributions to the work and growth of AIT.

In his final annual report in 1983, Banks described AIT's financial position as "somewhat cheerful," noting that "during the fiscal year 1982-83, the INSTITUTE received U.S.$11,484,194 in cash and kind contributions from 24 governments, 11 international agencies, 9 foundations, 23 national government agencies, and 20 business enterprises, or a total of 87 donors."

What accounts for this impressive array of support? Partly it was Banks's own insights into the motivations of potential donors, as well as the enterprise and enthusiasm of AIT's Vice-President for Development Pama, its faculty members, board members, and loyal friends. But as Pama and others hasten to point out, what really "sold" AIT was the product—the quality of the graduates it was producing.

It had been the dream of Pote Sarasin and other founders of the school to educate technocrats *in* Asia, *for* Asia—men and women to build roads, harbors, and irrigation and communication systems—the infrastructure that would make major industrial development possible. By the late 1970s and early 1980s it was clear that AIT was doing just that. A survey conducted by the school in 1982 revealed that 94 percent of its graduates were working in developing countries in Asia. Moreover, AIT's students were strategically located across a broad economic spectrum. They could be found in business, higher education, development-oriented nongovernmental organizations, and—more than a third—in government agencies and state-supported enterprises. They were the living proof of AIT's success and its best ambassadors. By the end of 1983 its graduate roster included students from twenty-two Asian countries—stretching geographically from Afghanistan to Papua New Guinea.

It was not only students who helped develop AIT. As Pama says, the school attracted faculty members who "came to us because they believed in the school's experiment. The moment they came they were totally immersed in making a contribution; after they finished their tours, they became our strongest ambassadors of goodwill in their respective countries," both encouraging their governments to support the INSTITUTE and suggesting to the INSTITUTE projects with the best potential for funding.

The infectious enthusiasm of AIT's faculty and board members was among the factors that attracted its next president, Professor Alastair M. North. In 1980 North, a research scientist in the field of polymer and molecular processes, had just completed a term as deputy principal of Strathclyde University, Glasgow, Scotland. When he was invited to fly to Paris to interview for the presidency of AIT, he thought it was a hoax. An engineering school in Bangkok? Interviews in Paris? But having discovered that his principal had recommended him to the search committee, he went. During his interview with the head of the search committee, the Canadian ambassador to Thailand Fred Bild, he became intrigued by the challenge and when offered the position "had absolutely no hesitation in accepting it."

One thing that struck North was the support AIT had not only from the government of Thailand but from other Asian governments. This stood in dramatic contrast to attitudes in the United Kingdom and the United States at the time, where universities were little appreciated by government and even under attack. To illustrate, North likes to tell of a meeting in Taiwan just three weeks into his new job, during which the prime minister of Taiwan said: "If it was not for the graduates of your university who built the roads, built the dams, built the harbors, which started this country's rising development and its economic progress—if it was not for your graduates, this country would not be where it is today. It's a debt we can never repay. How can we help you?"

When he assumed the leadership of AIT in 1983, one of North's goals was to involve the faculty more fully in academic planning. His idea was that AIT should not grow by grafting new fields to old ones in response to donor interest or to initiatives taken by individual faculty members but that it should expand in accordance with a faculty-determined master plan. The first fruit of this effort was the "1985-1988 Academic Plan" that identified three areas for development: first, integrating management skills with instruction in classical engineering; second, managing natural resources; and third, developing a training program in manufacturing technology. In accordance with the plan an environmental research station, which was donated by Germany, was opened in 1988, and in 1989 AIT admitted the first students to its new School of Management.

Today the INSTITUTE is also moving rapidly into the field of computer-assisted manufacturing. With such technology, North says, "you can have a dream tonight and you can have a product on the shelf at the shop by tomorrow night."

Over the years AIT's student body and faculty have become increasingly diverse. In the beginning students from Thailand, the Philippines, and Taiwan dominated. But since 1967 and AIT's separation from SEATO, the student body has become more diversified and today almost all countries in Asia are represented, including the People's Republic of China (as a consequence of which AIT now terms Taiwan "Chinese Taipei") and Vietnam; indeed, the head of AIT's computer science division is a Vietnamese citizen. The school prefers that no nationality account for more than one-fifth of the students enrolled.

Diversity, of course, has potential disadvantages as well as advantages. Miscommunication between people of different cultures is one. From the beginning AIT has attempted to overcome this problem by fostering a single-language environment on campus. English is the

language of instruction and research, and it is also the language in which the vast majority of AIT's students communicate with each other. Although no one is accepted who lacks sufficient command of English for graduate-level study, AIT's language center helps students who want to improve their language skill. And for students studying through the medium of English for the first time, there is a pre-master's English booster course.

Communicating through a common language that is virtually everyone's "second language" helps create camaraderie among AIT's diverse students, as does the school's policy of forbidding students—even Thais—to live off campus. One consequence of this policy is that AIT is a "foreign enclave" within Thailand. (Some of its non-Thai students do learn Thai, but usually only for social purposes. More often than not AIT's students studying languages other than English are pursuing German, French, or Japanese—languages useful in doctoral programs or postdoctoral work after leaving AIT.)

Politics is a potential problem in such a diverse student body. Virtually all of AIT's students come from countries in which questions of political power, justice, popular participation in government, or economic equity remain far from resolved. Periodically, of course, these and other issues precipitate political responses about which AIT's students may have passionate feelings. Yet acting openly in expression of these feelings can be divisive within the school community and at times a problem for AIT as an institution with close and friendly ties to the government of Thailand.

A case in point was the suppression by the Chinese government of demonstrators in Tian'anmen Square in Beijing in 1989. When several AIT students demonstrated outside the Chinese embassy and were identified as such on television, North warned that if they carried on public political protests he would have no choice but to send them home. AIT, however, does not discourage students from organizing on-campus seminars and forums that address political issues.

For the most part AIT's students support the "no politics" policy. They work hard and are more motivated by their own career goals and professional interests.

Indeed, AIT students are hard workers who spend the vast majority of their time in class, in the library, in the laboratory, or at work on field projects. Classes meet year round, with only short breaks dividing one trimester from the next.

This intense life of study and multicultural interaction breeds fast friendships and loyalties. Pama attributes the school's remarkable camaraderie to the fact that most students are living outside their own countries for the first time. Living in a pan-Asian environment, they discover their common humanity. They also realize they are participating in an exciting experiment. Bonds are closest among students of the same year, but through an extensive and well-organized alumni association AIT's graduates form an Asia-wide network of friends and associates linked by the common experience of the school.

The faculty, too, seems to form a bond with the institution. In fact, a number of foreign professors who came on a short-term basis have since returned as permanent staff. President Banks is but one example. Moreover, AIT's younger faculty is increasingly made up of former graduates who have earned their doctorates elsewhere and returned to teach at their alma mater. Today the approximately 120-member faculty is almost as diverse as the student body, and about half are Asians. The INSTITUTE naturally prefers faculty members with practical experience in addition to academic credentials.

AIT applies a single salary scale for all teachers and officers that it hires directly—irrespective of their national pay scales. Quite a few are not hired directly, however, but are chosen and paid by their home governments; their salaries are a private matter in which AIT takes no interest. Although this results in discrepancies, none are dramatic. "Some of our seconded [independently hired] persons are living quite comfortably," admits North, "but none of them is driving a Rolls Royce while our directly hired people struggle on bicycles."

A bigger problem with seconded faculty is the "overseas aid syndrome." Some newcomers to Asia condescendingly assume that since "this is the way it is done in my country, this way will be good for Asia." In time this attitude usually changes as a result of the experience of teaching at AIT and working with its more seasoned faculty. Moreover, faculty members are routinely evaluated by their students, a procedure organized by the student union but taken quite seriously by the administration.

The heart of AIT is its master's degree program. In any given year about 80 percent of the INSTITUTE's students are enrolled in it. There is no core course or set of requirements. Rather, course sequences are set by each of the nine divisions: (1) agricultural and food engineering, (2) computer science, (3) energy technology, (4) environmental engineering, (5) geotechnical and transportation engineering, (6) human settlements development, (7) industrial engineering and management, (8) structural

engineering and construction, and (9) water resources engineering. Master's degree students finish in two years after five trimesters of study and completion of a thesis project. The latter, if possible, addresses practical problems in their own country.

Each division also offers the doctoral degree, which normally entails nine trimesters of study. Ten percent of AIT's students are presently pursuing doctorates. Another 10 percent are enrolled in the three-trimester diploma programs and in certificate courses in which they study subjects ranging from irrigation to remote sensing technology. Princess Maha Chakri Sirindhorn* of Thailand is among the graduates of AIT's certificate courses in the latter.

On a contractual basis AIT also offers short courses for government agencies, companies, and other client groups in various parts of Asia. These courses vary from two weeks to three months in length. They are tailored to meet the specific needs of the clients, who pay all of the students' expenses as well as a fee to AIT. In any given year a thousand or so participate in such programs. These courses pay for themselves and contribute to the school's reputation and influence.

Other activities with a "multiplier" impact are joint programs with other universities. For example, students at Bangladesh University of Engineering and Technology are permitted to spend one term of their degree program in study at AIT.

Other parts of the INSTITUTE's outreach efforts are its Asian Disaster Preparedness Center and Regional Computer Center, with its campus-based information banks that collate and store data in the fields of geotechnical engineering, environmental sanitation, engineering resources, and the ferro-cement industry. Furthermore, AIT's Regional Research and Development Center coordinates and markets the INSTITUTE's research expertise.

AIT is also engaged in contract research. Among the nearly two hundred problems under investigation by its faculty and advanced students in 1988 were the application of enamel to improve the performance of agricultural implements; the use of composted water hyacinths in fish production; solar ponds and their applications; the improvement of tractor efficiency in paddy fields; economic feeding systems for Muscovy ducks; and the environmental impact of a proposed power plant extension. Many of these projects will have concrete applications regionwide as well as extend the reputation of AIT.

*RMAF Awardee in Public Service, 1991.

The most important "reputation multipliers" of AIT, however, are its students. The institution now boasts more than sixty-five hundred alumni from some twenty nations; 90 percent of them are employed in Asia, the vast majority in their own countries. AIT's graduates move quickly into middle- and senior-level positions in government and business and also serve as faculty members in Asia's universities. In this way, AIT performs a critical bridging function between the Western engineering schools that have trained most of AIT's faculty at the doctoral level and Asian schools where many of AIT's graduates teach. AIT plays a special role transmitting—and adapting to the special needs and circumstances of Asia—international advances in engineering.

Although President Bender's dream of a U.S.$100 million endowment is still far from achieved, the INSTITUTE has prospered by gaining the support of an astonishingly wide array of regular donors. In 1988, for example, twenty-three countries made contributions in cash or kind. Donations from Australia, Thailand, Germany, Japan, and the Netherlands, in that order, far outstripped those from the United States, although the latter has been the single largest contributor over the years. The United Nations Development Program, the Asian Development Bank, and thirteen other major international organizations also contributed in 1988, as did seven foundations and fifty-five national government agencies—led by those of Thailand, but ranging from Canada to Vietnam. Moreover, fifty-one businesses and industries made contributions, most prominently IBM, which regularly subsidizes faculty positions and also contributes to the special AIT Foundation/IBM. Altogether such contributions in 1988 came to U.S.$15.5 million.

About the future, there seems to be little doubt. The INSTITUTE continues to grow in a spirit of prudent optimism.

In 1969 Bender described the SEATO Graduate School of Engineering as "a school that will concentrate on engineering applicable to the problems, conditions and limitations of the region." In 1989 AIT faces regional problems that are more diverse than ever and whose solutions are, of necessity, increasingly high-tech. In its early years AIT's graduates were needed—for the most part—to carry out the tasks of building the basic infrastructure of Third World economies, and in many parts of the region these basic infrastructural needs must still be met. Asia's rural masses still require simple and inexpensive technologies, e.g., fuel-efficient water pumps and stoves and better hand tools. On the other hand, the region's economies have generated new prosperity and higher standards of living for millions of urbanites and have propelled Asian workers, engineers, and managers into manufacturing, communications, and construction fields that require the latest in world technology.

Today AIT must meet both needs. On the one hand, its students use the latest computers to design appropriate technologies for the still-poor countryside, e.g., biogas plants and solar generators. On the other hand, AIT's engineers design and build computer-driven factories, skyscrapers, and satellite communications systems!

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