ASIAN INSTITUTE OF TECHNOLOGY

1998

ANNUAL REPORT
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1998 Annual Report
of the Asian Institute of Technology
Released in April 1999
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The range of research activities carried out in

1998

reflects AIT's diverse fields of expertise, as it pursues its transformation from a modest graduate school of engineering into a research university of international repute.
1998 IN BRIEF

Royal Audience

Her Royal Highness Princess Maha Chakri Sirindhorn graciously granted a Royal Audience on 9 October 1998 to 25 recipients of Their Majesties the King and Queen Scholarships for 1997/98.

PRESIDENTIAL SEARCH

the January 1999 meeting of the Board of Trustees.

Prof. Armand’s term of office will begin in May 1999, coinciding with the completion of Prof. Charas Suwanwela’s Interim Presidency which began on 17 August 1998.

Prof. Armand, M. Sc., 1968, and Ph.D., 1971, in Aeronautics and Astronautics, from Stanford University, California, brings to AIT extensive experience as a university administrator, a distinguished academic and a senior technology and engineering adviser and consultant to eminent organizations, including the European Parliament, the Council of Europe and the European Commission. He has been Professor of Applied Mechanics at the University of Aix-Marseille since 1987 and is the founding President of the Institut Méditerranéen de Technologie, Marseille. Prof. Armand served as President until 1992.

Prof. Armand has written extensively in the fields of applied mechanics, ocean engineering, science and technology policy research evaluation, technology transfer, and related topics. He was awarded a Knighthood (Order of the Legion of Honor) by the French Republic in 1991.

AIT HONORS FORMER PHILIPPINE PRESIDENT

The Institute conferred the Honorary Degree of Doctor of Technology on former Philippine President, General Fidel V. Ramos, at a ceremony held at the Malacanang Palace in Manila on 20 February 1998.

General Ramos described AIT as Asia's premier technological institute for higher learning, citing the growing number of Filipino alumni who hold key positions in the public and private sectors in the Philippines. M.L. Birahongse Kasemr, Chair of the AIT Board of Trustees, led AIT officials at the conferment ceremony.

Welcome to Malacanang Palace. Former Philippine President, General Fidel V. Ramos, and Mrs. Amelia Ramos greet Dr. Roger G. H. Downer, former AIT President, as M. L. Birahongse Kasemr, Chair of the AIT Board of Trustees, looks on.
Prof. Charas Suwanwela speaks on AIT’s accomplishments and the challenges in the years ahead.

"Global socio-economic changes, the development of national higher education systems in the region, and rapid advancements in science and technology suggest the need for changes in AIT’s vision, strategies, management and modes of action.

"To realize AIT’s potential to its fullest extent, changes must be made in the right direction, and AIT’s friends, partners and benefactors must be mobilized. If AIT’s potential is realized, the Institute faces a very prosperous future."

1998 Student Enrolment

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>May</th>
<th>Sept</th>
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</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>213</td>
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<td>221</td>
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<tr>
<td>Master's</td>
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<tr>
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<tr>
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<td>1334</td>
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*Certificate of Advanced Studies, Certificate, Special Programs, Bridging Program.

Degrees Awarded in 1998

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<th>Dec</th>
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<td>219</td>
<td>149</td>
<td>592</td>
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</tbody>
</table>

Five Largest Groups of Graduates in 1998

- Thailand 167
- Vietnam 67
- Nepal 53
- PRC 46
- India 31
- Bangladesh 31


- China 611
- Sri Lanka 511
- Philippines 767
- Chinese Taipei 806
- Thailand 2178

Alumni Distribution by Region of Residence

- South East Asia, the Pacific and Australia (50.97%)
- South Asia and West Asia (19.56%)
- North & South America, and Europe (4.82%)
- East Asia and Central Asia (12.52%)
- Middle East (0.39%)
- Africa (0.25%)

(11.5% residence unknown)
It is my great honor and privilege to serve the Presidency of this noble institution during this interim period. I owe this opportunity to the Board of Trustees, especially the Chair and the Chair Emeritus, and I would like to thank them for their trust and confidence. I would also like to acknowledge the understanding and cooperation of the AIT community.

AIT is justifiably proud of its achievements. Firstly, AIT is firmly established as one of the region’s few reputable international institutions of higher learning that is committed to the development of Asian countries, through engineering and technology education, research and outreach.

Secondly, the AIT alumni have transformed AIT into an institution whose role in Asia’s development truly extends beyond the campus. Large numbers of alumni occupy leadership positions in governments, universities, and private enterprises, helping to build-up infrastructure and human resources in many Asian countries. The alumni’s loyalty to AIT is, in my opinion, exceptionally remarkable. I commend the AIT Alumni Association and its national chapters for their dedication and strength.

Thirdly, AIT’s management systems and structures have evolved over the years and now represent a basic strength for the Institute. I would like to cite the tertny evaluation of academic programs, the careful assessment of students by our Council of Examiners and Appeal Panel, and the annual evaluation of all faculty. At a campus-wide level, the Senate and its Executive Council and committees provide opportunities for broad participation in the affairs of the Institute.

However, these achievements do not leave room for complacency. AIT is facing serious challenges brought about by global socio-economic changes, the development of national higher education systems in the region, advances in science and technology, as well as the emergence of information technologies. These now necessitate changes in our vision, strategies, management and modes of action.

A top priority of my Interim Presidency has been a re-orientation of central administration aimed at coordinating the work of senior administrators. Thus, a Vision and Action Team was organized to provide concerted collective leadership and decision-making. The Team coordinated the iterative development of the Institute’s policy framework, for presentation at the January 1999 meeting of the Board. The process I must point out, brought AIT constituents together to discuss their common future. Policy questions and issues concerning AIT’s goals and means were duly addressed. Through discussions in various circles, options for future action were evaluated and the most promising ones selected.

The Vision and Action Team, assisted by the Treasurer, was responsible for the budget formulation process, which aimed to link financial allocation to the Institute’s policy and action plan.

Another top priority has been quality assurance. A quality improvement plan, formulated following a series of committee and group discussions, requires existing mechanisms for quality assurance to be made more effective through measurable indicators, reliable information, and fair judgment by accountable committees and panels.

I have also identified as a priority the need for our academic programs to undergo re-engineering in order to make them really effective, flexible,
dynamic, and innovative. The on-going initiatives in this regard must be strengthened and accelerated. We need to maximize the opportunities offered by new information and communications technologies, and to enhance delivery of distant, experiential, and student-centered modular education. I am happy to report that some members of the AIT faculty are assisting in the development of a curricular and faculty improvement package, designed to assist the quality-upgrading of undergraduate engineering and technological education in Asian universities. Related activities are being discussed in many circles dealing with academic quality.

The quality of our programs and outputs hinges on the quality of our faculty and staff. Consultations paving the way for a major reform of our personnel management have been initiated and are continuing.

On the financial front, we need to improve AIT’s revenue so that in addition to operations, it can support investments in facilities, especially scientific and computational equipment, and personnel development. AIT will have to diversify its sources of financing, including, for example, large contracts for research and consultancy projects. The establishment of the AITA-NET, a consortium founded by a core group of alumni investors, together with on-going discussions concerning the formation of AIT Inc., an entrepreneurial arm of AIT, represent potential sources of new financing.

I cannot disregard the need for efficient management of our existing resources. More than ever, our management information system must be upgraded and put to maximum use, particularly in view of the implementation of the cost center concept, which places the responsibility for decision-making and resource generation on the Schools and Centers. On the other hand, we need to recognize that over-emphasizing self-sufficiency of each unit and inappropriate costing of cross-unit functions could create fragmentation and redundancy. To ward off these potential dangers, we have initiated a re-organization of our investment, budgeting, accounting and auditing systems.

Being a dynamic institution, AIT needs to be nurtured by constant improvements in all fronts: personnel, financial and academic management as well as governance.

With its achievements and intrinsic strength, AIT has a great potential to institute changes in the right direction over the coming years. I wish it a very prosperous future.

Prof. Charas Suwanwela
President
NEW VENTURES

Medical Technology R&D

The Institute’s first-ever medical technology R&D project is underway in the Industrial Systems Engineering (ISE) Program in the School of Advanced Technologies. It is being carried out in collaboration with the Division of Biomechanics and Engineering Design, Katholieke Universiteit Leuven, Belgium.

The R&D project concerns the design and production of medical devices based on digital medical images, such as those acquired using computer tomography (CT) and magnetic resonance imaging (MRI) scans. The images are imported into computer-aided design software to produce computer models of the bones of individual patients. The data provide the basis for custom-designing orthopaedic implants and medical tools. These include advanced cutting and drilling guides which are used to ensure optimal fit with selected sections of specific bones. The project will also evaluate CAD applications in the production of plastic sockets used to attach limb-restoring prostheses.

At a later stage, research in semi-automatic design of tumor replacement implants and the design of low-cost limb-restoring prostheses will be introduced at the Master’s level.

A rapid prototyping machine for the actual production of medical devices will be installed at the ISE laboratory.

The four-year project, which is funded by the Belgian Administration for Development Cooperation, is supporting the secondment of a Belgian expert and a Ph.D. scholarship. Another Ph.D. scholarship has been provided by the National Metal and Materials Technology Center under the National Science and Technology Development Agency of Thailand.

Distributed Education Center

The establishment of the Distributed Education Center supports the delivery of AIT courses off-campus, using latest information technologies.

In 1996 the newly established center was engaged in the planning, design and implementation of the Web Class on demand pilot project. Two courses, computer-aided design of production systems and inventory management, offered by the Industrial Systems Engineering (ISE) Program, were used as experimental courses. The Web application utilizes a LAN-based multimedia delivery concept with enhanced user’s interactivity. The prototype of the developed application was demonstrated to ISE students at AIT and the AIT Center Vietnam in Hanoi.

The center is also currently involved in the design and development of the integrated tool box Web application project. The aim is to integrate all necessary Web-based course development tools for different types of data, such as text, audio, video and collaborative data into a single application environment called integrated toolbox.
NEW DEGREE PROGRAMS

Microelectronics

The proliferation of new generation products embedded with intelligent microchips, micro sensors and micro actuators attests to the semiconductor industry's growing need for improved expertise and technological capability. In the production and operation of microelectronic devices and systems.

A proposed Master's Program in Microelectronics Program, to be launched in May 2000, responds to this need.

Microelectronics will be offered in collaboration with Thailand's National Electronics and Computer Technology Center (NECTEC) under the National Science and Technology Development Agency. A course structure for the academic program is under development by a joint task force composed of faculty from the School of Advanced Technologies, NECTEC researchers, and representatives from the Thailand Graduate Institute of Science and Technology. Inputs will be provided by international experts from the academy and industry.

A series of workshops, seminars and training activities are planned in 1999, starting with the Microelectronics Initiative Workshop in January.

Biotechnology via Distance Learning

Jointly with Wageningen Agricultural University in the Netherlands, AIT launched the delivery by distance of a Master's Program in Biotechnology, at a ceremony presided over by The Prince de Lignac on 2 November 1998.

The first two courses to be delivered by distance are plant molecular biology, focusing on latest developments in genetic engineering in plants, and agrification, pertaining to the application of bioprocess technology in agriculture and food production. These will be followed by the delivery of industrial microbiology and enzyme and DNA technologies.

A complete biotechnology curriculum for transmission by Internet and satellite is expected within the next two years.

Ph.D. in Urban Environmental Management

By the year 2020, over 50 percent of the world's population is expected to reside in urban areas, many of which will be the size of mega-cities with population in excess of 10 million.

The Ph.D. Program in Urban Environmental Management responds to the need to develop the knowledge and skills necessary to solve problems arising from rapid urbanization. It focuses on management and planning, social sciences, systems analysis and modeling, analytical techniques, and environmental sciences and technology. Potential responses such as decentralization, deregulation and privatization of urban facilities and services require careful evaluation. Cities have unique opportunities to develop and implement local solutions to many of these problems.

The Ph.D. curriculum emphasizes theory as well as practice, linking the academic world with real-life issues defined by communities and the private and public sectors. The Ph.D. doctoral dissertation emphasizes a mastery of different theoretical approaches and methods.

Scholarships and financial assistance have been made available by the Canadian Universities Consortium (CUC), the Japanese Government and other donors. CUC scholarships are awarded to qualified students from South East Asia to support their first two years of studies. Subsequent support will come from student employment in a UEM research project or in a sponsored research project.
STUDENTS

ENROLMENT RECORD

1998 Student Enrolment

<table>
<thead>
<tr>
<th>by Program</th>
<th>Jan</th>
<th>May</th>
<th>Sept</th>
<th>1998 Average</th>
<th>1997 Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>213</td>
<td>215</td>
<td>221</td>
<td>217</td>
<td>196</td>
</tr>
<tr>
<td>Master's</td>
<td>1096</td>
<td>1023</td>
<td>1052</td>
<td>1057</td>
<td>940</td>
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<tr>
<td>Diploma</td>
<td>2</td>
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<td>1</td>
<td>2</td>
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<tr>
<td>Other Programs*</td>
<td>84</td>
<td>94</td>
<td>99</td>
<td>92</td>
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<td><strong>Total Degree Enrolment</strong></td>
<td>1309</td>
<td>1238</td>
<td>1273</td>
<td>1274</td>
<td>1136</td>
</tr>
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</table>

Doctoral Enrolment as a percentage of Total Degree Enrolment: 16.2% 17.3% 17.3% 17% 17.2%

*Including Bridging, Certificate of Advanced Studies, Certificate and Special Program.

- In 1998, Master's students accounted for some 77% of the annual average enrolment.
- The Doctoral enrolment reached an annual average of 217, representing 17% of the total degree program enrolment, a level similar to the previous year but still below the 20% target set by the Board of Trustees.

APPLICATION TRENDS

The 1998 total of 3809 applications represented a 10% increase from the previous year, with the number of applications received for the September term being the largest.

The average application-to-intake ratio of 4.7 is higher than last year's. A placement ratio of one student per five applicants was maintained during the May and September terms.

<table>
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<th>Applications Received in 1998</th>
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<td>May</td>
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<td>September</td>
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<td><strong>Total</strong></td>
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by Country

<table>
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<th>Sept</th>
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<tr>
<td>Azerbaijan</td>
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<tr>
<td>Bangladesh</td>
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<td>Bhutan</td>
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<td>Cambodia</td>
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<td>Canada</td>
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<td>Chinese Taipei</td>
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<td>Stateless</td>
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<td><strong>Total</strong></td>
<td>1395</td>
<td>1334</td>
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</table>
STUDENT AFFAIRS

The Office of the Dean of Student and Community Affairs (DSCA), working closely with the Student Union, provides a wide range of services to the student community. Arrangements have been put in place for student counselling, medical care, housing accommodation, faculty/student liaison, and safety and security.

The Student Union carries out a variety of enrichment programs through social, cultural and sports activities. Responsibility for the Student Union rests with the General Assembly and the Executive Council led by the Union President.

Student Union activities range from cultural activities to debates, literary contests to study trips, and other activities on- and off-campus.

EMPLOYMENT AND CAREER DEVELOPMENT

Technology and Job Fairs, organized by the DSCA, assist graduating students in penetrating the employment market. About 20 to 25 multinational companies participate in each fair, to recruit new employees as well as to promote their products, services and technical expertise.

The search for employment opportunities through e-mail exchanges is a new facet of the Technology and Job Fairs. In the future, an exhibition of student research will be organized to complement the product and technology exhibit of participating companies.

women also facilitate the Institute’s initiatives in developing partnerships with industry.
International Partnerships for Education

Postgraduate Technological Studies Program

The Postgraduate Technological Studies (PTS) Program signed by AIT and the European Commission (EC) in September 1997 supports the advanced technology education of postgraduate students from Asia and the European Union.

Explaining the PTS objectives, H.E. Mr. Michel Caillouët, Ambassador-Head of the EC Delegation to Thailand, says, “The European Union is working hard to develop closer relations and cooperation with Asia in order to bring mutual benefits. Asia, the world’s most dynamic region, has excellent long-term growth prospects. On the other hand, the European Union, the world’s largest single market with 370 million inhabitants, accounts for one-fifth of the world’s trade and is at the cutting edge of modern technology. If we can develop mutual understanding between our respective societies, the potential for cooperation is limitless.”

The first group of students from the European Union joined the Master’s program at AIT in September 1998. An essential part of their studies is a one-term internship at a university or a research center in South or Southeast Asia. In the same year, the first group of selected AIT students traveled to the European Union for a one-term internship in a university or a research center. They also used this period to gather data for their Master’s research project and to be acquainted with the academic and research world in the European Union as well as with European cultures.

Miss Beatriz Gonzalez Manchon, 27, is a PTS scholar from Spain and a former junior expert at the EC Delegation in Bangkok. She says, “The Gender and Development Studies Program will help me to consolidate my Asian experience. The curriculum is interesting, challenging and progressive. I am interested in forming new perspectives on development issues, particularly on the roles of men and women in Asian societies and how these roles influence the management of natural resources, the direction and pace of socio-economic development and other aspects of the development process.”

Mr. Kristian Forars, 27, a PTS scholar from Finland and a graduate from Vasa Swedish Polytechnic, joined the Structural Engineering and Construction Program for two reasons. “I wanted to gain new expertise in structural engineering and, at the same time, to study in Asia in an international environment.” It has been a good experience, according to Mr. Forars, who has overcome the initial hurdles of settling down to a new environment and is looking forward to commencing his thesis research.
Interdisciplinary Program in Mechatronics

The Interdisciplinary Program in Mechatronics is offered jointly with the Techni- 
cal University of Hamburg-Harburg, Germany, with support from Siemens, AG, and Siemens, 
Thailand.

The first group of seven Asian students was admitted in May 
1997, spending the first term at AIT followed by a year's stay at 
TUHH to complete the credit requirements for course work. The 
students have returned to AIT to carry out thesis research. One 
student graduated in December 1998 and is now working for Si-
emens, while the six others are expected to graduate in April 1999. 
The second group of six Asian students is now enrolled at TUHH.

The first group of four German students arrived at AIT in October 
1997 for 10 months of research study and industrial training in 
Thailand. The second group is expected to join AIT in September 
1999.

Siemens provides scholarship support and training opportunities 
to both Asian and German students, and sponsors the secondment 
of short-term experts and provision of equipment.

Plans are underway to expand the program.

Mr. Charoen Rompet, 36, is Head of the Mechatronics 
Division at Rajamangala 
Institute of Technology 
(Nonhaburi campus). "TUHH 
has exposed me to the way 
research is supported and 
conducted in Germany and 
given me valuable insights into 
my research, Hybrid of Global 
and Local Path Planning for 
Mobile Robot.

"The AIT/TUHH curriculum 
is well-organized, and with 
some modifications, it can be 
used in our own program at 
RIT."

Miss Atika 
Kongwitayapanit, 22, an 
electrical engineer by training, 
joined the Mechatronics 
Program because of her 
interest in automation and 
control systems as an area of 
research.

The AIT/TUHH program 
familiarized her with advanced 
research equipment and 
computer facilities that she 
used in carrying out her 
research, Locomotion Control 
for a Six-Legged Robot.

'I hope that the AIT/TUHH 
program will facilitate real 
technology transfer through 
research," she says.
Visiting Researchers

The Asian Center for Research on Remote Sensing (ACoRS) and the Space Technology Applications and Research (STAR) Program collaborate with universities and research organizations in exchange programs for visiting researchers.

Mr. Yasue Shigeta, 25, a computer scientist and programmer in the GIS Section of Chuo Mapping Co., Ltd. in Japan, is involved in the development of mountain and city area maps.

Mr. Horst-Dieter Heitmann, 26, is on a three-month internship at ACoRS as part of his study program in Applied Systems Science at the University of Osnabrück, Germany. He is working on a project to link sea surface temperature, obtained from AVHRR satellite data, with the weather and heat island phenomena of Bangkok. "Professionally and personally, I am grateful for the opportunity to be here. I am very interested in Southeast Asia. I feel that I have learned a lot about Asian culture and values."

Dr. Hansa Vathananukul is a member of the Faculty of Engineering, Kasetsart University. She is currently researching NOAA satellite data applications to studies of the Lower Chao Phraya River Basin, the Songkla Lake and His Majesty the King’s Royal Projects.

Dr. Hansa graduated from the University of Tokyo, where she met her mentor, Prof. Shunji Mural, Coordinator of the STAR Program and a respected international authority in remote sensing and GIS technologies.

Interdisciplinary Mechatronics Program

Mr. Wei Xiaozhou, 26, speaks highly of the good communication channels between students and faculty at TUHH. He says, "Dialoguing is emphasized, meaning that students learn a lot." He would like to have longer on-the-job training with German industry combined with classroom study. Back at AIT, he is completing his research, Sensor Based Navigation Device Design.

Mr. Vinayak Divate, 24, is engaged in research that involves robotics, image processing, robot vision, and software building. It is entitled Assembly of Robot Vision Cell. "The AIT/TUHH program gave me so much - technologically and culturally. The lectures are a good combination of Asian and European knowledge and expertise."

Mr. Muhammad Azeem Ashraf, 30, is currently involved in a research, Development of an Open Architecture Control for a Three-Axis CNC Milling Machine.

"I hope that the AIT/TUHH Mechatronics Program will improve my communication skills, guide my career planning, and familiarize me with new technologies. So far, I am pleased with the results."
Special Program for Thyssen-Krupp Managers

The School of Management is participating in the international training program offered by the Germany-based multinational Thyssen-Krupp to its young managers. SOM exposes the Thyssen-Krupp managers to Asian business and industry through such courses as International Human Resources Management, Cross Cultural Management, International Joint Ventures and Negotiations, Technical Transfer of Technology, Business-to-Business Marketing, and the Asian Business Environment.

Mr. Christian Fischer is Deputy Managing Director of Polymer Solution Co. Ltd. in Bangkok, a joint venture between Thyssen and the Gaysorn Group. Mr. Fischer will remain in Thailand for another two to three years, giving him ample opportunity to put his SOM training into practical use.

Mr. Christophe Kaczorek, 33, is Export Project Manager at Thyssen Ascensor in France.

SOM Exchange Students

Mr. Dong-Hun Jung, 32, is a project engineer at Thyssen Nolteiler GmbH in Wadern and a resident of Germany for the past 17 years. He finds management subjects a good complement to his technical background and is particularly enthusiastic about the practical applications of negotiation and joint venture courses. These courses, he says, have helped him to build new business contacts and given him a better appreciation of the Asian market.

Mr. Di-Chuan Sheng, 40, an engineer at Johann A. Krause Maschinenfabrik GmbH, based in Bremen, Germany, says he has gained insights into the philosophy of Asian marketing. "Asians are very polite but not direct. While this may not be difficult in the early stages of negotiation, it becomes more critical as we approach project execution."

Mr. Sheng considers SOM a great opportunity to build contacts with the Asian market and to promote his company.

He suggests greater participation of high-level managers from industry in SOM seminars, and the inclusion of courses on interfaces to American and European markets, in addition to the Asian market.

Miss Helene Marchal, 23, a third year student from Ecole Superieure de Commerce de Paris or ESCP (the Paris Graduate School of Management), finds the SOM focus on academic research a good balance to the ESCP emphasis on professional interactions with business and industry.

Miss Nguyen Hoai-Huong Noiile Truong, 22, a fourth year Law student at the University of Amsterdam, the Netherlands, believes that a management background is ideal for an aspiring corporate legal advisor.

Mr. Sera Loimas, a fourth year Marketing student at the Helsinki School of Economics and Business Administration, is following SOM courses that deal with different aspects of international trade and business.
The Institute awarded degrees to 592 graduates in 1998, bringing the total number of alumni since 1961 to 9259. There were 144 graduates from SAT, 132 from SCE, 216 from SERD, and 100 from SOM. By nationality, the five largest groups of graduates came from Thailand, Vietnam, Nepal, PRC, and India.

"To maintain the vitality and dynamism of our region over the long-term, free and open debates on issues that affect all of us must be encouraged. We have come a sufficiently long way to begin asking the kinds of questions that will prepare our societies for development, not only in the technical sense of the word, but in its truest sense: development as liberation from want, fear, suffering - from all limitations."

H. E. Dr. Surin Pitsuwan, Minister of Foreign Affairs of Thailand, elaborating on Asia's coming of age, at the 82nd graduation on 23 April.

"Do not be desirous to have things done hastily, do not look at small advantages. The desire to have things done quickly prevents their being done thoroughly. Looking at small advantages prevents great affairs from being accomplished."

Mr. Lee Seng Tee, Director of the Lee Foundation, speaking on the search for success and fulfillment at the 83rd graduation on 14 August.

"It is impossible to impose global standards on every aspect of life."

Mr. Yoshiro Takasaki, Chairman of Toyo Seika Kaisha Ltd., Japan, cautioning Asian countries from blindly adopting Western standards and practices in business, industry and other sectors, at the 84th graduation on 18 December.
### GRADUATION AWARDEES

<table>
<thead>
<tr>
<th>April</th>
<th>August</th>
<th>December</th>
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| Mr. Hem Nath Chimire  
(SCE, GTE) Nepal  
Deeswassongkol Prize | Mr. Hoang Tung  
(SERD, AAG) Vietnam  
Chintara Boonthamjinda Memorial Prize | Mr. Le Chi Tuan  
(SAT, CSIM) Vietnam  
Hisamatsu Prize |
| Mr. Sushil Kumar Chaudhary  
(SCE, GTE) Nepal  
Chin Fung Kee Prize | Mr. Nagarajan Ramalingam  
(SERD, AFE) India  
Y. Y. Kishida Prize | Miss Mayuree Srikulwong  
(SAT, CSIM) Thailand  
Hisamatsu Prize  
Shouichiro Toyota Prize |
| Mr. Ian C. Espada  
(SCE, GTE) Philippines  
Barbara and John Hugh Jones Prize | Mr. Sabin Raj Meskey  
(SERD, BPT) Nepal  
Albert Stevens Prize | Mr. Truong Hoang Tu  
(SAT, ISE) Vietnam  
James A. Linen III Memorial Prize |
| Mr. Andi  
(SCE, SEC) Indonesia  
Mahesh Varma Prize | Mr. Herath M. Wijekoon Banda  
(SERD, Energy) Sri Lanka  
Jasnas A. Linen III Memorial Prize | Mr. Nguyen Thi Hong Minh  
(SAT, ISE) Vietnam  
Tim Kendall Memorial Prize |
| Mr. Varameth Vichiensan  
(SCE, SEC) Thailand  
Hisamatsu Prize | Mr. Keshab Raj Sharma  
(SERD, EE) Nepal  
Robert B. Banks Prize | Mr. Padam Lal Kafle  
(SAT, TC) Nepal  
Telecom-Finland Prize |
| Mr. Palboon Tirasil  
(SCE, SEC) Thailand  
Aoyagi Prize | Mr. Phatta Bahadur Thapa  
(SERD, EE) Nepal  
Robert B. Banks Prize | |
| Mr. Su Yunsehng  
(SCE, WEM) PRC  
Hokkai Prize | Mr. Nobbir Ahmed  
(SERD, HSD) Bangladesh  
Sukum Navapan Prize | |
| Mr. Rupan Kantil Das  
(SCE, WEM) Bangladesh  
Alastair M. North Prize | Mr. Dinesh Mananchar  
(SERD, STAR) Nepal  
Tim Kendall Memorial Prize | |
| Mr. Le Hung Nam  
(SCE, WEM) Vietnam  
Sukum Navapan Prize | Ms. Pawar Dhamshree Bhagwat  
(SERD, UEM) India  
Hisamatsu Prize | |
| Mr. Rajeev Ranjan  
(SOM, MT) India  
Haider Razi Prize | Ms. Vasuhi Rasanaygam  
(SERD, BPT) Sri Lanka  
Yoh Kurosewa Prize | |
| Mr. Sarjoy Das  
(SOM, IB) India  
Whem Hill Prize | | |
| Mr. D. S. Chetiya P. Perera  
(SOM, MT) Sri Lanka  
Whem Hill Prize | | |
| Mr. Wasique Waheed Chaudhry  
(SOM, MT) Pakistan  
Sandeep Mohapatra Memorial Prize | | |
| Ms. Suwannee Sirisuknuntadech  
(SOM, IB) Thailand  
Mahesh Varma Prize  
Hirorichi Seya Prize | | |
| Ms. Taruna Gupta  
(SOM, IB) India  
Mahesh Varma Prize  
Hirorichi Seya Prize | | |

Note: The entries in parentheses indicate the graduates' respective Schools and Programs. Background information on graduation award sponsors is provided on page 51 of the Appendix.
Mr. Surendra Shrestha, AITAA President, reports:

"After several years' discussion and the commissioning in 1997 of a feasibility study, the AIT Alumni Association, at its 1998 annual general meeting in Manila, approved the formation of a new international development consortium to be called AIT Alumni Network Limited (AITA-NET Ltd.). The Board of Directors is chaired by Dr. Subin Pinkayan, alumnus of Class 1 and former member of the AIT faculty.

The AITA-NET Ltd. is an independent for-profit company registered in Hong Kong. It constitutes a consultancy network of more than 9,000 alumni in almost all Asian countries, together with their companies and with the current members of the AIT Faculty.

The wide geographical distribution, broad portfolio of skills, and assurance of excellence, make AITA-NET a cogent Asian resource.

With regard to support for AIT, as well as any dividend return by the possibility of a shareholding, AIT will receive as an endowment donation 10% of the AITA-NET profit. In this way, the AITA-NET will create a new form of alumni support for their Alma Mater, one which is appropriate to this region and is sure to excite interest in many other universities worldwide.

Alumni Distribution

<table>
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<tr>
<th>School</th>
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<td>Advanced Technologies</td>
<td>1754</td>
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<tr>
<td>Civil Engineering</td>
<td>3084</td>
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<tr>
<td>Environment, Resources and Development</td>
<td>3667</td>
</tr>
<tr>
<td>Management</td>
<td>554</td>
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<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

<table>
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<tr>
<th>Degree</th>
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<td>D. Eng.</td>
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<tr>
<td>D. Tech. Sc.</td>
<td>70</td>
</tr>
<tr>
<td>Ph.D.</td>
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</tr>
<tr>
<td>M. Eng.</td>
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<tr>
<td>M. Sc.</td>
<td>2266</td>
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<tr>
<td>MBA</td>
<td>546</td>
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<tr>
<td>Diploma</td>
<td>235</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9259</strong></td>
</tr>
</tbody>
</table>

The five largest groups of AIT alumni are from:

- Thailand: 2178
- Chinese Taipei: 808
- Philippines: 787
- Sri Lanka: 619
- India: 611
27th AITAA
GOVERNING BOARD MEETING

The 27th Governing Board Meeting of the AIT Alumni Association (AITAA) was held on 19-22 February 1998 in Manila. It was hosted by AITAA-Philippines under the leadership of Chapter President, Dr. Primitivo Cal (CRD ’70), and GMB organizers, Mr. Anthony S.F. Chiu (IEM ’86) and Ms. Fe N. Ferriols (CS ’82).

In his speech, M.L. Birabhongse Kasemsri, Chair of the AIT Board of Trustees, expressed his personal interest in the work of all AIT alumni and extended his appreciation for the AITAA’s achievements.

By far the most well attended annual alumni meeting, the 27th GMB provided a meaningful backdrop for the conferment of the AIT Honorary Degree of Doctor of Technology on former Philippine President, General Fidel V. Ramos.

The 1999 AITAA GMB and homecoming will be held in Thailand. Other future venues are India (2000) and Indonesia (2001).

by Region of Origin

North America, Europe and Africa (50.10%)

Southeast Asia and West Asia (32.57%)

East Asia and Central Asia (16.54%)

North America, Europe and Africa (0.58%)

by Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
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<tr>
<td>Bangladesh</td>
<td>610</td>
</tr>
<tr>
<td>Bhutan</td>
<td>15</td>
</tr>
<tr>
<td>India</td>
<td>611</td>
</tr>
<tr>
<td>Iran</td>
<td>12</td>
</tr>
<tr>
<td>Nepal</td>
<td>551</td>
</tr>
<tr>
<td>Pakistan</td>
<td>562</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>619</td>
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<tr>
<td>Turkey</td>
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<tr>
<td>Sub-total</td>
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<tr>
<td>Belgium</td>
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<tr>
<td>Bolivia</td>
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<tr>
<td>Canada</td>
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<td>Egypt</td>
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<tr>
<td>Ethiopia</td>
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<tr>
<td>Finland</td>
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<tr>
<td>France</td>
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<tr>
<td>Germany</td>
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<td>Ghana</td>
<td>2</td>
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<tr>
<td>Honduras</td>
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<tr>
<td>Kenya</td>
<td>4</td>
</tr>
<tr>
<td>Malawi</td>
<td>3</td>
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<tr>
<td>Netherlands</td>
<td>2</td>
</tr>
<tr>
<td>Nigeria</td>
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</tr>
<tr>
<td>Sweden</td>
<td>2</td>
</tr>
<tr>
<td>Tanzania</td>
<td>8</td>
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<tr>
<td>UK</td>
<td>2</td>
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<tr>
<td>USA</td>
<td>11</td>
</tr>
<tr>
<td>Zambia</td>
<td>1</td>
</tr>
<tr>
<td>Sub-total</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>9259</td>
</tr>
</tbody>
</table>
1998 FACULTY WORKSHOP

The need for an external academic quality audit (AQA) was strongly endorsed at the 1998 Faculty Workshop, which was organized by the Institute's Educational Development Working Group (EDWG) in the first quarter of the year.

To provide an impetus to School-based efforts to implement AQA and to develop AQA processes and documentation appropriate to AIT, the EDWG proposed an on-campus workshop to be led by an external resource person with AQA experience in other universities.

Over 60 faculty and senior administrators attended the 1998 Faculty Workshop, making it the largest such gathering to date.

The workshop focused principally on three issues:

- The EDWG's central role in supporting and promoting the adoption of diverse approaches to teaching and learning at AIT.
- The Curriculum Innovation Award, under the aegis of the Office of the Vice President (Academic) and the EDWG, is clearly a success, with several Faculty Workshop presenters using the award for developing state-of-the-art coursework.
- However, it should be re-oriented toward group awards, thus reinforcing the need for innovations to be sustainable.

The formation of special interest groups and the organization of seminars on educational development issues are some mechanisms proposed by the EDWG to foster and sustain an excitement about what AIT faculty are doing as professional educators.

ACADEMIC QUALITY MANAGEMENT

The introduction of total quality management complements current efforts to maintain a culture of academic excellence throughout the Institute.

Mechanisms for monitoring academic standards and appropriate teaching and learning environments have been incorporated in a conceptual framework developed by the Vice President (Academic), allowing full development of the students' potentials. The conceptual framework encompasses various dimensions of quality and covers the quality of students, faculty, educational and research processes, facilities and various support services.

As spelled out in the conceptual framework, three issues are central to quality assurance at AIT.

- The first of these is a review of procedures currently used to manage academic quality (that is, the quality of programs, methods of instruction, and all other pertinent areas), and to develop new procedures as necessary.

- The second is the need to ascertain the effectiveness of quality control procedures, and provide feedback for improvement.

- The third is to monitor academic quality management through a quality assurance committee.

The conceptual framework for total quality management has been presented to the Educational Development Working Group and the School Forums. Feedback and reactions have been solicited and will be incorporated in the final framework.
1998 Student-to-Faculty Ratio*

<table>
<thead>
<tr>
<th>School</th>
<th>Jan</th>
<th>May</th>
<th>Sept</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Technologies**</td>
<td>8.19</td>
<td>13.30</td>
<td>12.29</td>
<td>11.26</td>
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<tr>
<td>Civil Engineering</td>
<td>10.02</td>
<td>5.76</td>
<td>10.54</td>
<td>8.77</td>
</tr>
<tr>
<td>Environment, Resources and Development</td>
<td>8.89</td>
<td>8.64</td>
<td>5.54</td>
<td>7.69</td>
</tr>
<tr>
<td>Management</td>
<td>19.99</td>
<td>15.69</td>
<td>19.94</td>
<td>18.54</td>
</tr>
<tr>
<td>All Schools</td>
<td>10.16</td>
<td>9.67</td>
<td>9.41</td>
<td>9.71</td>
</tr>
</tbody>
</table>

*Based on student headcount and full-time faculty equivalent, the 1998 average student-to-faculty ratio was 9.7, exceeding the 9.0 target ratio set by the Board of Trustees. Higher loads of degree-level teaching and student supervision loads were reported by faculty from the School of Management and the School of Advanced Technologies.

** Including 25 students taught at AITCV in Haroi.

1998 Faculty Headcount

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>May</th>
<th>Sept</th>
<th>Average</th>
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<tr>
<td>Full-time Faculty:</td>
<td>138.65</td>
<td>139.32</td>
<td>145.54</td>
<td>141.17</td>
</tr>
<tr>
<td>- Direct-hire</td>
<td>(97.32)</td>
<td>(95.99)</td>
<td>(101.71)</td>
<td>(98.34)</td>
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<tr>
<td>- Seconded</td>
<td>(41.33)</td>
<td>(43.33)</td>
<td>(43.83)</td>
<td>(42.63)</td>
</tr>
<tr>
<td>Part-time Faculty:</td>
<td>76</td>
<td>81</td>
<td>60</td>
<td>76.99</td>
</tr>
<tr>
<td>- Short-term Visiting</td>
<td>(16)</td>
<td>(8)</td>
<td>(10)</td>
<td>(11.33)</td>
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<tr>
<td>- Associated</td>
<td>(42)</td>
<td>(49)</td>
<td>(48)</td>
<td>(46.33)</td>
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<tr>
<td>- Affiliated</td>
<td>(15)</td>
<td>(17)</td>
<td>(16)</td>
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<tr>
<td>- Adjunct</td>
<td>(3)</td>
<td>(7)</td>
<td>(6)</td>
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<td>214.65</td>
<td>220.32</td>
<td>225.54</td>
<td>220.16</td>
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1998 Report on Academic Activities

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<th>SCE</th>
<th>SERD</th>
<th>SOM</th>
<th>CEC</th>
<th>CLAIR</th>
<th>CLET</th>
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<td>5</td>
<td>6</td>
<td></td>
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<td>210</td>
<td>229</td>
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</table>

| Continuing Education Activities |
| conferences | 1 | 1 | 6 | 1 | 1 | 10 |
| workshops   | 3 | 2 | 24 | 4 | 5 | 36 |
| seminars   | 14 | 7 | 30 | 22 | 2 | 4 | 82 |
| short courses | 1 | 2 | 28 | 51 | 5 | 87 |
| special lectures | 1 | 2 | 28 | 51 | 5 | 87 |
| others***   | 9 | 9 | 2 | 2 | 26 | 133 |
| total       | 19 | 12 | 97 | 29 | 66 | 10 | 11 | 244 | 248 |

*In 1998, the number of publications, a total of 692, increased slightly from the 1997 figure, with journal papers accounting for 30% of the total output.

**Monographs, Working Papers, Consultancy Reports, Reviews, Academic Unit Research Reports, Occasional Papers, Newsletters, Reference Materials, Handbooks, Lecture Notes, Serial Publications, Databases, Technical Notes, etc.

***Study Trips, Special Projects, etc.
The following selection of 1998 sponsored and grant research reflects the wide range of research projects carried out at AIT.

SCHOOL OF ADVANCED TECHNOLOGIES

Medical Technology
The project is aimed at the transfer of knowledge in the design and production of medical devices to the Southeast Asian region through research, education and broad consultancy, in collaboration with the Division of Biomechanics and Engineering Design of the Katholieke Universiteit Leuven, Belgium. Efforts to efficiently disseminate knowledge in the Southeast Asian region will be coordinated with MTEC, Thailand.

Investigators: IS&E/AIT, Jos Vander Sloot, KUL Belgium
Sponsors: VfIR (Flemish Inter-University Council), in cooperation with Katholieke Universiteit Leuven

Developing an Open Architecture CNC Machine
The development of an open architecture CNC Machine based on a PC leads the way to better training in all aspects of CNC operations, as well as to improved maintenance of machines. In addition, better integration with other factory automation systems can be achieved. The project is being carried out in cooperation with Thailand’s Rajamangala Institute of Technology and the Department of Vocational Education.

Investigators: E.L.J. Bohez, N. Afzulpurkar, M. Parrickkun
Sponsor: Belgian Govt.

Developing curricula for training software developers
In addition to existing and additional academic activities in universities and training institutions, new activities are being explored jointly with IBM to promote its products and improve its training programs, including certification of IBM software developers.

Investigator: D.N. Batanov
Sponsor: IBM

---

Revenue Summary of Research Projects
FY 1993-94 to FY 1997-98 (Baht '00)

<table>
<thead>
<tr>
<th>Year</th>
<th>Schools</th>
<th>Centers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-1998</td>
<td>121,183</td>
<td>41,971</td>
<td>163,054</td>
</tr>
<tr>
<td>1996-1997</td>
<td>141,158</td>
<td>26,529</td>
<td>167,687</td>
</tr>
<tr>
<td>1995-1996</td>
<td>104,647</td>
<td>24,889</td>
<td>129,336</td>
</tr>
<tr>
<td>1994-1995</td>
<td>112,617</td>
<td>67,413</td>
<td>180,030</td>
</tr>
<tr>
<td>1993-1994</td>
<td>66,484</td>
<td>22,879</td>
<td>89,363</td>
</tr>
</tbody>
</table>
SCHOOL OF ENVIRONMENT, RESOURCES AND DEVELOPMENT

Tractor-mounted pineapple dressing machine
A dressing machine mounted at the front of a four-wheel tractor provides a cleaner and faster way to dress pineapples. A hydraulic drive powers the rotating blades of the machine that can dress up to four rows of pineapple plants at a time. Modifications to further improve the efficiency of the machine are underway.

Investigator: V. M. Selokhe, C. Kaewprakaisangkul
Sponsors: Siem Agro-Industry Pineapple and Others Public Co. Ltd., Thailand

Improving the YY male technology
The YY male technology is targeted at solving the problem of unwanted fish production, which leads to overpopulation and stunted growth of fish stocked for culture. Field trials in the Philippines have shown genetically male tilapia to increase aquaculture yields by 40% and profitability by over 100%. Self-sustaining dissemination programs in the Philippines and Thailand have helped promote the technology among farmers.

Investigator: G.C. Mail
Sponsor: Dept. for International Development (DFID) - Fish Genetics Program

Standardizing the evaluation of fruit and vegetable quality
Consumers and processors measure the quality of fruits and vegetables based on a set of quality attributes that is different from that used by growers and producers. Quality determination and standards are important tools in the agricultural processing industry as these provide a common language for producers and consumers and serve as a basis for incentive payments. Information about quality standard and determination methods are being gathered for selected fruits and vegetables, such as mangoes, babycorns, papayas, ginger and tomatoes. The data will be used to design and develop commodity-specific evaluation and procedures.

Investigator: A. Noomhorm
Sponsor: Ministry of Industry, Thailand

Coal and natural gas in APEC countries
Under investigation are the cost-effectiveness, benefits, and scope of a second-phase study to evaluate the long-term economic and environmental costs of alternative energy scenarios. The role of coal and natural gas is stressed in each scenario. Focus is placed on the power sector, which is the largest and most viable market for coal and natural gas. Current developments are expected to present important changes to coal and natural gas utilization. Production and consumption of coal and natural gas in the 21 APEC member countries will be covered.

Investigator: T. Lefaure, R. Paculan
Sponsor: APEC Secretariat/APEC Expert Group on Clean Fossil Energy
Gender relations and economic development in matrilineal societies

This research examines and documents different matrilineal cultures and aspects that account for gender-equalitarian societies. It also assesses the impact of economic development on gender relations. Recommendations for future policy planning, to ensure that gender equality does not decline as a result of economic development, will be presented.

Investigator: G. Kukar
Sponsors: Netherlands Govt., HIVOS, IFAD

Urban indicators to establish a quality-of-city life index and develop an urban infrastructure assessment model

This research seeks to identify relevant urban indicators to determine the overall quality of city life, taking into account the economic, social and environmental components of sustainable development, as well as good governance. In addition, the research aims to develop a model to assess and rectify infrastructure at the local level, integrating performance and provision indicators and incorporating indicators proposed by the community.

Investigators: A. Mehta, Yap Kioe Sheng
Sponsor: Urban Management Center

SCHOOL OF CIVIL ENGINEERING

Traffic-Induced Vibration and Fatigue of Bangkok’s Steel Overpass Bridges

Many of Bangkok’s light and flexible steel overpass bridges have high traffic-induced responses that could lead to fatigue. Thirteen overpass bridges are the subject of a study that will measure bridge responses under normal traffic conditions and under controlled conditions, the volume of truck traffic, dynamic tests of ten-wheel trucks, and so on. The findings will be used as bias for appropriate recommendations on rehabilitation, repair, improvement, and maintenance of overpass bridges.

Investigators: P. Warachai (jointly with the Sirindhorn Int'l. Inst. of Technology and Arun Chaisiri Consulting Engineers Co., Ltd.)
Sponsor: BMA, Thailand

Hexagonal Wire Mesh Reinforcement

A full-scale, fully instrumented test embankment has been constructed to develop design criteria and procedures for the analysis of embankment construction using hexagonal wire mesh reinforcement. Data on foundation responses and deformation patterns of the reinforcement and backfill soil will be used to verify a parametric study using the finite element method. Test results will be analysed to obtain the basic properties of soils and reinforcements and the interaction behavior at the soil/hexagonal wire interface.

Investigator: D.T. Bargado

Navigation Channel for Krabi Thermal Power Plant

The thermal power plant in Krabi, Southern Thailand, with a capacity of 2 x 300 megawatts using 3,266 x 106 liters of bunker oil, is expected to become operational by the year 2000. The study will propose a detailed design for a navigation channel to be used by 4,000-5,000 DWT sea-going oil tankers, as well as 1,000 DWT river barges. A numerical model will be used to study sedimentation and to design all navigation aids, analyze the dispersion and impact of dredging material, propose appropriate disposal location and dredging method together with time intervals for dredging maintenance.

Investigators: S. Vongvisesarri, N. Phien-wej, S. Woesakul, C. Charoenigam
Sponsor: EGAT, Thailand

Collapse of Pumping Station

Under investigation is the collapse of the concrete diaphragm walls of an intake pumping station in a wastewater treatment plant now being constructed on RAMA III Road in Bangkok. The walls collapsed while excavation was underway inside the tank. A conceptual proposal for remedial and reconstruction work will be submitted after the investigation.

Investigators: W. Kanok-Nukulchai, N. Phien-wej, N. Anwar
Sponsor: Cunningham International (Thailand) Ltd.
Incorporating Waste Materials In Highway Construction for Southeast Asia

The waste material identified for investigation is fly ash. Lignite fly ash is the residue generated from the burning of lignite coal. An effective method of utilizing large volumes of fly ash is to manufacture aggregates from fly ash for plain and structural concrete. In order to obtain a better understanding of the properties and behavior of fly ash aggregate (FAA), its and mechanical and durability properties have been studied.

Investigators:
A. C. Wijewickrema,
C. Chroeerangam
Sponsor: Netherlands Faculty Research Grant AIT

Water Pumping from Pumduang River

Considering the river's existing geometry, the study provides the design of water intake structures for a pumping station of Pumduang River in Surat Thani Province in Southern Thailand, and determines whether the condition of river flow and transport of sediment are under equilibrium condition. The annual average flow and low flow are considered in the design. The design of the intake canal will take into account its appurtenance structures and appropriate location and the acceptable amount of flow and sediment transport that can be withdrawn from the river. Design modification will be recommended if necessary.

Investigator: T. Tingkanchai
Sponsors: Aspas Consultant Co. Ltd., Bangkok Engineering Services and Technology Co. Ltd., Thailand

SCHOOL OF MANAGEMENT

Asia's Comparative Financial Markets

Financial markets in Asia outside Japan are the fastest growing in the world, with the largest growth in the equity (stock) markets. Globalization has increased competition in these markets and deregulation has opened many new business opportunities. European banks and finance companies have been very active. Recent initiatives to set up an ASEAN financial executives group as well as an ASEAN stock exchange reflect an interesting trend towards professionalism and regionalism.

This project will examine these trends and their impact on the performance of stock markets and changes in financial companies in terms of strategy, technology and organizational change.

Investigators: F.W. Swierczek, J. P. Gupta
Sponsor: EC

Entrepreneurship in Thailand’s High-tech Firms

In past research on technological entrepreneurship, firms were considered as independent units of economic activity which pursue rapid growth, the innovation process was accorded a linear sequential view, individual strategic choice was assumed, the focus was on the personalities of individual entrepreneurs or on cultural determinants, and the time frame was narrow.

This study analyzes the innovation process in entrepreneurial, technology-based firms in the light of modern innovation theory, which views the process as complex, iterative and systemic in character, and relying on strategic integration and networking. Some 40 new, technology-based firms in Thailand are included in the study.

Investigator: B. Igel
Sponsor: Self-support

Investments in Thailand's Distance Training Network

This study will identify the engineering, technical and related managerial training needs of companies in key sectors of industry: manufacturing, automobile, electronics and computer, telecommunications, and petro-chemical/energy. It will also assess the potential of universities, training institutions and companies as well as government agencies, to provide training and use distance media such as satellites or cable. Media companies will be interviewed on the costs and benefits of appropriate technology for distance training.

Investigator: F.W. Swierczek
Sponsor: NSTDA, Thailand

Technology Parks - Case Studies In Asia

The effective organization and management of science, technology, and industrial parks in the Republic of Korea, Chinese Taipei, Singapore, Malaysia and Thailand are the subject of these case studies to demonstrate best practices in the region.

Investigator: F.W. Swierczek
Sponsor: NSTDA, Thailand

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OUTREACH

The establishment of new School-based outreach centers and fora highlighted outreach efforts in 1998.

The Geoinformatics Center, which houses the Asian Center for Research on Remote Sensing (ACRoRS) and the GIS Applications Center (GAC), advances the integration of geoinformatics technology research, training and consultancy at AIT. Another SERD outreach arm established in 1998 is the AIT Agro-Food-Bioprocess Industries Forum.

The two new centers in the School of Civil Engineering are the Asian Center for Soil Improvement and Geosynthetics, established in July, and the Asian Center for Transportation Studies, established in November.

Revenue Summary of Outreach Activities FY 1993-94 to FY 1997-98 (Baht '000)

<table>
<thead>
<tr>
<th>Year</th>
<th>Seminar</th>
<th>Conference</th>
<th>Symposium</th>
<th>Training + Short Course</th>
</tr>
</thead>
<tbody>
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<td>1997-98</td>
<td>4,930</td>
<td>6,967</td>
<td></td>
<td>18,212</td>
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<tr>
<td>1996-97</td>
<td>3,135</td>
<td>3,444</td>
<td>134</td>
<td>9,627</td>
</tr>
<tr>
<td>1995-96</td>
<td>5,065</td>
<td>845</td>
<td></td>
<td>9,335</td>
</tr>
<tr>
<td>1994-95</td>
<td>3,667</td>
<td>1,154</td>
<td>1,385</td>
<td>16,580</td>
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<tr>
<td>1993-94</td>
<td>5,532</td>
<td>2,009</td>
<td>876</td>
<td>13,598</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Seminar</th>
<th>Conference</th>
<th>Short Course + Symposium + Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-98</td>
<td>17,563</td>
<td>5,253</td>
<td>46,024</td>
</tr>
<tr>
<td>1996-97</td>
<td>23,170</td>
<td>35,945</td>
<td>13,758</td>
</tr>
<tr>
<td>1995-96</td>
<td>2,665</td>
<td>1,965</td>
<td>36,386</td>
</tr>
<tr>
<td>1994-95</td>
<td>13,547</td>
<td></td>
<td>33,126</td>
</tr>
<tr>
<td>1993-94</td>
<td>6,164</td>
<td>478</td>
<td>8,165</td>
</tr>
</tbody>
</table>

AIT IN VIETNAM

In Vietnam, AIT operates the Swiss-AIT-Vietnam (SAV) Management Development Program in Ho Chi Minh City and the Hanoi-based AIT Center Vietnam.

The target participants for the SAV Program are Vietnamese management teachers, some of whom later join the MBA Program of the School of Management at AIT.

Thirty-eight participants (34 university lecturers and four business executives) are currently enrolled in SAV's sixth academic program, covering the period 1999-2001.

The 25 participants in the fourth program (1997-1999) have completed their second term at the School of Management at AIT and have returned to Vietnam to prepare their MBA thesis research. The fifth program covers the period 1998-2000.

SAV conducts management training seminars for universities and the business community. The 1998 outreach program provided training in business simulation models, enterprises in a market economy environment, public administration reform, quality management and applications in Vietnam, effective selling skills, recruitment and performance management, total quality management, and related topics.

The AIT Center Vietnam (AITCV) held its first alumni homecoming on 19 September 1998. The event coincided with AITCV's fifth anniversary, during which it presented the 1999 training programs and discussed plans to open an Executive MBA Program and expand collaborative activities with AIT's four schools and relevant academic centers.

AITCV's first academic program in Industrial Systems Engineering produces some 25 graduates annually and to-date has awarded Certificates and Diplomas to some 80 graduates, many of whom now hold key positions in industry and the public sector. AITCV graduates are given the opportunity to apply for admission into the ISE Master’s Program at AIT.

AITCV's third ISE graduation ceremony held on 25 November 1998 was complemented by a special forum on human resources development for Vietnam.

In 1998 AITCV offered more than 80 short-term courses in high technology management and language training.
Asian Center for Research on Remote Sensing (ACRoRS)

Since its establishment in 1995, ACRoRS has been receiving and archiving data from NOAA AVHRR. The data are distributed worldwide and are transferred via the Internet to the University of Tokyo for near real-time environmental monitoring. The near real-time feature of ACRoRS’s reception has made the Center an attractive research partner for various agencies. ACRoRS’s research findings are used as inputs to training courses organized by GAC. ACRoRS provides research opportunities to students of the STAR Program.

GIS Applications Center (GAC)

Established in 1995 with initial funding from the UNEP/EAP-AP, GAC conducts training courses in fast-growing GIS and space technologies. To-date, GAC has trained close to 400 technicians and professionals from the Asia-Pacific region. GAC training courses in 1998 included advanced courses in remote sensing and GIS for watershed management and disaster mitigation, SAR data and potential, and basic GIS courses. Two programs were conducted in Indonesia and Vietnam, and support was extended to a French Government-sponsored basic GIS course on tropical diseases.

Asian Center for Transportation Studies (ACTS)

ACTS carries out research, training, information dissemination activities and consultancies focusing on new traffic management systems that utilize modern information and communications technologies. Its inauguration was part of an international seminar, Intelligent Transportation Systems: the 21st Century Asian Challenge.

Asian Center for Soil Improvement and Geosynthetics (ACSIG)

The ACSIG seeks to consolidate activities pertaining to soil and ground improvement. It also serves as a catalyst to advance soil and ground improvement techniques and to promote the application of geosynthetics to geotechnical problems.

SCHOOL FORA

Advanced Technology Forum (ATF)

ATF presentations in 1998, focusing on HRD and research activities of member companies, featured Seagate Technology (Thailand) Ltd. and Unocal Thailand Ltd. on 21 May, Siemens Ltd. on 18 June, Alcatel (Thailand) Co. Ltd. on 16 July, Miller Freeman (Thailand) Co. Ltd. on 24 September, Ericsson (Thailand) Ltd. on 29 October, and Siam Cement Plc. on 19 November.


AIT Agro-Food-Bioprocess Industries Forum (AFBIF)

The AFBIF provides a platform for the exchange of technical information between AIT and companies engaged in agricultural and food production and bioprocess technology.

To support real needs in the industry and to ensure the relevance of thesis research, AFBIF members are encouraged to propose topics for student research in agro-food and bioprocess technologies. They are given access to the research output and to the profiles of graduating students for future reference.

AFBIF membership is open to business establishments and organizations with interests in agro-food and bioprocess technologies and relevant industries.
RESOURCES AND ADMINISTRATION

RESOURCE GENERATION

Resource generation efforts during the year under review were challenged by the continuing economic downturn throughout the Asia-Pacific region. Particular attention was given to maintaining partnerships with traditional donor countries. The Royal Thai Government approved a grant of US$2,506,234 covering the RTG 1998 fiscal year. The Government of Japan approved a grant of US$3,059,600 for FY 1997-98. A proposal requesting US$5,065,960 for FY 1999 has been submitted and is awaiting approval. Partnership opportunities with Japanese affiliated business companies in Thailand are being explored.

A result of the Institute's first venture into the Gulf region is an agreement signed with Sharjah College in the United Arab Emirates; for the admission of qualified Sharjah students into AIT's Management and Computer Science Programs on a fee-paying basis.

In anticipation of the completion of the Institute's current MoUs with major European donors, requests for extensions and/or renewals have been put forward, taking into account modifications to reflect the priorities of funding agencies as well as AIT. The AIT/Danida MOU will end in June 1999. A task force has been constituted to prepare a proposal for the next phase of the cooperation program.

The AIT/Sida Agreement will end in December 1999. Annual consultation was held between Sida and AIT in November 1998 to review the ongoing programs and to discuss the possibility of Sida-AIT cooperation beyond 1999.

A new AIT/NORAD Agreement was signed on 9 December 1996, providing support valued at NOK 27.6 million in the form of Master's scholarships (1998-2001) for nationals from Bangladesh, Bhutan, Nepal, Sri Lanka, Laos, and Vietnam, faculty support and other components.


The AIT/SDC Agreement will end in June 1999. A draft proposal for the next phase (July 1999-June 2002) includes 36 Master's scholarships, faculty support, and the Asian Case Clearing House Project in the School of Management.

A proposal for the renewal of the AIT/French Government Collaboration for FY 1999 was submitted to the French Embassy in December 1998.

Phase 2 of the Netherlands Human Resources and Institutional Development Program ended in June 1998. Since some of the Phase 2 activities are on-going, a budget extension was granted for the period July 1998 to June 2001. Negotiations for Phase 3, expected to start by mid-1999, will be conducted pending the completion of an evaluation mission to be fielded in the early part of the year.
1998 AIT Annual Report

CENTRAL ADMINISTRATION FUNCTIONS

Under the interim Presidency, the central administration functions of the Institute have been distributed among three Vice Presidents namely, Prof. Karl E. Weber (Management), Prof. Mario T. Tabucanon (Academic), and Prof. Pisichai Karasudh (Development and Promotion).

Prof. Charas Suwanwela, an AIT Trustee from 1989 to 1995 and an educator of international stature, assumed office as President for the interim period on 17 August 1998, following the resignation of Dr. Roger G. H. Downer in May.

The new post of Vice President (Management) covers coordinating and overseeing units concerned with budgeting, human resource management and development, physical plant operations, medical and health care, purchasing and inventory, security and safety, AIT Center operations, sports facility management, faculty and staff housing, and the playschool/child center operations. The goal is to foster mutual recognition of work in administration, support and auxiliary services, and academic, and to instill appreciation of particular achievements by the entire AIT community. Emphasis is laid on consultation within and beyond the responsibility area.

![Images of Prof. Charas, Prof. Weber, Prof. Tabucanon, and Prof. Pisichai](images)

Budget for FY 1997-98*

<table>
<thead>
<tr>
<th>Revenue (In Millions of Baht)</th>
<th>Expenditures (In Millions of Baht)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>296.00</td>
</tr>
<tr>
<td>Center Contributions</td>
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</tr>
<tr>
<td>CEC</td>
<td>4.50</td>
</tr>
<tr>
<td>ADPC</td>
<td>1.50</td>
</tr>
<tr>
<td>RCC</td>
<td>10.60</td>
</tr>
<tr>
<td>AIT Center Vietnam</td>
<td>7.50</td>
</tr>
<tr>
<td>Auxiliary Operations</td>
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</tr>
<tr>
<td>Sub-Total</td>
<td>40.35</td>
</tr>
<tr>
<td>Contract Research Revenue</td>
<td>17.10</td>
</tr>
<tr>
<td>Government Grants</td>
<td>12.35</td>
</tr>
<tr>
<td>Other Sources</td>
<td></td>
</tr>
<tr>
<td>Investment Revenue</td>
<td>17.00</td>
</tr>
<tr>
<td>Other Revenue</td>
<td>40.20</td>
</tr>
<tr>
<td>Sub-Total</td>
<td>47.20</td>
</tr>
<tr>
<td>Total</td>
<td>423.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenue (In Millions of Baht)</th>
<th>Expenditures (In Millions of Baht)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools/ Programs</td>
<td>195.49</td>
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<tr>
<td>Academic Centers</td>
<td>47.44</td>
</tr>
<tr>
<td>Capital Purchases</td>
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<td>Academic Support</td>
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</tr>
<tr>
<td>Student Activities</td>
<td>1.89</td>
</tr>
<tr>
<td>Administrative Departments</td>
<td>61.55</td>
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<tr>
<td>Campus Services</td>
<td>59.39</td>
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<tr>
<td>Campus-wide Support</td>
<td>12.94</td>
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<tr>
<td>Budget Contingency and Reserves</td>
<td>24.72</td>
</tr>
<tr>
<td>Grand Total</td>
<td>423.00</td>
</tr>
</tbody>
</table>

*The FY 1987-98 budget of Baht 423 million increased by 24.04 per cent over that of FY 1986-97. Tuition and fees accounted for the largest increases in income. Decreases were noted in government grants and investment revenue.

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### Resources and Administration

#### Governments

<table>
<thead>
<tr>
<th>Country</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>0.42</td>
</tr>
<tr>
<td>Bhutan</td>
<td>0.05</td>
</tr>
<tr>
<td>Brunei</td>
<td>0.07</td>
</tr>
<tr>
<td>Canada</td>
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</tr>
<tr>
<td>People's Republic of China</td>
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<tr>
<td>Chinese Taipei</td>
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<tr>
<td>European Community</td>
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<td>CEC</td>
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<td>Denmark</td>
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<td>Finland</td>
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<td>France</td>
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<td>Germany</td>
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<tr>
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<td>Netherlands</td>
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<td>Sweden</td>
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<td>UK</td>
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<td>India</td>
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<td>Japan</td>
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<tr>
<td>Korea</td>
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<td>New Zealand</td>
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<tr>
<td>Norway</td>
<td>1.75</td>
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<tr>
<td>Pakistan</td>
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<tr>
<td>Philippines</td>
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<tr>
<td>Switzerland</td>
<td>3.58</td>
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<tr>
<td>Thailand</td>
<td>0.02</td>
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<tr>
<td>Tunisia</td>
<td>0.66</td>
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<tr>
<td>USA</td>
<td>4.34</td>
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<tr>
<td><strong>Sub-total</strong></td>
<td>54.66</td>
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</tbody>
</table>

#### International Organizations

<table>
<thead>
<tr>
<th>Organization</th>
<th>Amount</th>
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<td>ADB</td>
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<tr>
<td>CIP</td>
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<tr>
<td>Commonwealth Secretariat</td>
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<td>ESA</td>
<td>0.18</td>
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<tr>
<td>ESCAP</td>
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<td>FAO</td>
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<td>ICOMOD</td>
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CAMPUS DEVELOPMENT

GeoInformatics Center
The GeoInformatics Center is located next to the Advance Agro Pulp and Paper Technology Building. Its construction cost of Baht 14 million was supported by the Chair Prof. Shunji Murai Personal Fund (Baht 6 million), ACRoRS and GAC (Baht 5 million), and AIT (Baht 3 million).

New student dormitory complex
The new dormitory complex, valued at Baht 90.9 million, provides accommodation for some 200 students. The Royal Thai Government contributed Baht 19.9 million to the construction cost, while AIT's Regional Computer Center provided Baht 6 million.

School of Management Building
Construction of the School of Management Building was completed in January 1999. The building is in the vicinity of the ST3 dorm and the Chalerm Prakiat Building.

Sports facilities
Additional sports facilities constructed in 1996 include two tennis courts, one basketball court and one volleyball court. Verdant sceneries surround these new facilities.

EXPANSION OF COMMUNICATIONS SERVICES AND UTILITIES

Improvements in communication services include the expansion of the PABX capacity from 1,300 to 3,300 lines, providing telephone connections to all student dormitories, the ST6 and ST7 staff housing units, and the new dormitories T, U, V and W.

Electrical power supply systems were installed for new buildings, including the Advance Agro Pulp and Paper Technology Building, the SOM and GeoInformatics Buildings, and the Student Union office complex.

To further ensure safety, a new protective switch gear for electrical substation no. 1 near the gate house was installed and electrical substation no. 6 was restructured by installing a larger transformer and circuit breaker. A new main distribution board was installed in the Administration Building.

To cope with the increasing demand for water, particularly during the dry season, a new water tower tank was constructed and a pipe laid to ensure water supply from the Provincial Waterworks Authority to AIT.

For energy conservation purposes, a 500-ton chiller, including pumps and a cooling tower, was installed to support a more efficient air conditioning system. The air conditioning system of the Medical Clinic was retrofitted. The water softener and two cooling towers of the chiller plant were repaired.

Towards the end of 1998, the laying of sewage and water supply pipes, and telephone lines to the SOM and GeoInformatics Buildings, and landscaping of the surrounding areas were completed.
INSTITUTE ADMINISTRATION

SENIOR ADMINISTRATIVE OFFICERS
President
Vice President (Management)
Vice President (Development and Promotion)
Vice President (Academic)
Institute Secretary
Treasurer

DEANS OF SCHOOLS
Advanced Technologies
Civil Engineering
Environment, Resources and Development
Management

CENTRE DIRECTORS
Asian Disaster Preparedness Center
Center for Language and Educational Technology
Center for Library and Information Resources
Continuing Education Center
Regional Computer Center
AIT Center Vietnam
Swiss-AIT-Vietnam Management
Development Program

STUDENT AFFAIRS
Dean of Student and Community Affairs
Student Union President

PROFESSORS
Prof. Charas Suwanwela
Prof. Karl E. Weber
Prof. Pisit Kerasudhi
Prof. Mario T. Tabucanon
Dr. Roger Hawkey
Mr. Avinash Patel

Prof. H. N. Phien (Acting)
Prof. Wongsak Kanok-Nukulchai
Prof. Chongkrak Polprasert
Prof. Jyoti P. Gupta

Mr. David Hollister and Mr. Aloysius Rego (Joint)
Dr. Nicholas Dimmit (Chair)
Dr. Francis Devadason
Dr. Nicanor C. Austriaco
Dr. Charoon Chirapaisarnkul
Dr. Jari Leo Henrik Backman
Dr. Hans Stoessel

Dr. Anila Sadananda
Mr. Sorasak Intarapanich (August 97-April 98)
Mr. Ramesh Kumar Hamal (May 98-January 99)

ABBREVIATIONS

SCHOOLS
SAT  School of Advanced Technologies
SCE  School of Civil Engineering
SERD School of Environment, Resources
and Development
SOM  School of Management

CENTERS
ADPC AsiAn Disaster Preparedness Center
AITC V AIT Center Vietnam
CEC Continuing Education Center
CLAIR Center for Library and Information
Resources
CLET Center for Language and Educational
Technology
RCC Regional Computer Center
SAV Swiss-AIT-Vietnam Management
Development Program

PROGRAMS
AFE  Agricultural and Food Engineering
ACRD Agriculture, Conservation and Rural Development
AARFM Aquaculture and Aquatic Resources Management
BPT  Bioprocess Technology
CSIM Computer Science and Information Management
Energy Energy Program
EE  Environmental Engineering
EMBA Executive Master of Business Administration
Gender Gender and Development Studies
GTE  Geotechnical and Transportation Engineering
HSD  Human Settlements Development
IB  International Business
ISE  Industrial Systems Engineering
MT  Management of Technology
PPT  Pulp and Paper Technology
SEC Structural Engineering and Construction
STAR Space Technology Applications and Research
UEM  Urban Environmental Management
WEM Water Engineering and Management Program
To The Board of Trustees of the Asian Institute of Technology

We have examined the balance sheets of the Asian Institute of Technology as at June 30, 1998 and 1997, the statements of revenues and expenditures of unrestricted current fund and restricted general fund and the related statements of changes in fund balance for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

Without qualifying our opinion, we draw attention to Note 1 to the financial statements. The operations of the Asian Institute of Technology as from the year ended June 30, 1998 have been affected and will continue to be affected for the foreseeable future by the economic conditions in Thailand and the Asia-Pacific Region in general. The ultimate effect that these uncertainties will have on stated values or classifications of assets and liabilities in the balance sheet statement cannot presently be determined and accordingly no provisions have been made.

In addition, we draw attention to Note 15 to the financial statements. The effect of the Year 2000 Issue arises because many computerized systems use two digits rather than four to identify a year. The effects of the Year 2000 Issue may be experienced before, on, or after January 1, 2000, and, if not addressed, the impact on operations and financial reporting may range from minor errors to significant systems failure which could affect an entity's ability to conduct normal business operations. It is not possible to be certain that all aspects of the Year 2000 Issue affecting the entity, including those related to the efforts of suppliers, or other third parties, will be fully resolved.

In our opinion, the financial statements referred to above present fairly the financial position of the Asian Institute of Technology as at June 30, 1998 and 1997, the revenues and expenditures of unrestricted current fund and restricted general fund and the changes in fund balance for the years then ended, in conformity with generally accepted accounting principles appropriate for non-profit organization as set out in Note 2 to the financial statements, applied on a consistent basis.

Somboon Supasiripinyo
Certified Public Accountant
Peat Marwick Suanchai Limited
Bangkok, October 20, 1998

ASIAN INSTITUTE OF TECHNOLOGY NOTES TO FINANCIAL STATEMENTS JUNE 30, 1998 AND 1997

NOTE 1 - ECONOMIC ENVIRONMENT AND BASIS OF PRESENTATION

In 1997, certain Asia-Pacific countries, including Thailand, experienced economic difficulties relating to currency devaluation and slow down in growth. Accordingly, the Thai Government sought assistance from the International Monetary Fund to alleviate the economic crisis and to improve the economy over time. The financial statements for the year ended June 30, 1998 have been presented on a going concern basis and in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year and reflecting the management's current assessment of the possible impact of this economic situation on the financial position of the Asian Institute of Technology. Actual results could differ from the management's current assessments and such differences could be material. In addition, the effect on the entity's financial position of future developments and access to further financial information concerning the Institute's customers, suppliers, financiers and others and their ability to continue to transact with the Institute cannot presently be determined. The financial statements for the year ended June 30, 1998 therefore may not include all adjustments that might ultimately result from these economic conditions.

NOTE 2 - BASIS OF PRESENTATION OF FINANCIAL STATEMENTS

Fund Accounting

In order to assure observance of limitations and restrictions placed on the use of resources available to the Institute, the books of account of the Institute are maintained in accordance with the principles of "fund accounting". This is the procedure by which resources for various purposes are classified for accounting and reporting purposes into funds which are in accordance with activities or objects specified. Within each fund group, fund balances which are restricted by outside sources are so indicated and are distinguished from unrestricted fund allocated to specific purposes by action of the governing board. As for unrestricted fund, the governing board retains full control of use to achieve any of its institutional purposes.

Investment incomes are recognized as income in the unrestricted current fund except for encumbrances, general reserve and capital funds which are accounted for in the fund to which they are restricted.

Other unrestricted revenues are recognized as income in the unrestricted current fund.

Restricted contributions, grants, appropriations and other restricted resources are accounted for in the appropriate restricted funds.
NOTE 3 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

- **Accrual Basis**
  The financial statements have been prepared on an accrual basis except for depreciation of fixed assets and contributions.
  Depreciation of fixed assets is not recorded in accordance with the fund accounting concept.
  Contributions are recognized on a cash basis due to the uncertainty in receiving contributions which are at the discretion of the donors.
  The statement of revenues and expenditures of unrestricted current fund and restricted general fund is a statement of financial activities of current fund related to the current reporting period. It does not purport to present the results of operations for the period as would an earnings statement.

- **Contributions in Kind**
  Contributions in kind are reflected in the financial statements on a fair value basis at the time of receipt.

- **Inventories**
  Inventories are valued at the lower of cost (first-in, first-out basis) and net realizable value.

- **Investments**
  Investment in debentures and warrants are stated at total lower of cost or market value.

- **Fixed Assets**
  Fixed assets are stated at cost at the time of acquisition or fair value at the time of donation in the case of contributions in kind.

- **Foreign Currencies**
  Exchange rates adopted:
  Foreign currency transactions during the year:
  - at the commercial bank rates ruling on transaction dates.
  Foreign currency transactions during the year recorded from AITCV's statements:
  - at the commercial bank average rate ruling on AITC's recorded month.
  Assets and liabilities in foreign currency outstanding on the balance sheet date:
  - at the commercial bank rates ruling on the balance sheet date.
  Exchange gains and losses are included in determining income.

NOTE 4 - RECLASSIFICATION

In the period June 30, 1998 the Institute had reclassified the group of expenditure of unrestricted current fund as part of the devolution of responsibilities for appropriate presentation. The comparative amounts for June 30, 1997 were not adjusted and therefore cannot be compared with the amounts of June 30, 1998.

NOTE 5 - INVESTMENTS

<table>
<thead>
<tr>
<th>Investments as at June 30, consisted of</th>
<th>1996</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time deposits with banks</td>
<td>504,840,795</td>
<td>237,580,039</td>
</tr>
<tr>
<td>Deposits with finance companies</td>
<td>1,769,684</td>
<td>233,518,293</td>
</tr>
<tr>
<td>Debenture</td>
<td>8,117,138</td>
<td>12,500,000</td>
</tr>
<tr>
<td>Warrant</td>
<td>289,250</td>
<td>331,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>514,750,695</td>
<td>483,829,032</td>
</tr>
</tbody>
</table>

The investments of each fund as at June 30, are as follows:

<table>
<thead>
<tr>
<th>Fund</th>
<th>1996</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unrestricted current fund</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>23,755,575</td>
<td>16,069,694</td>
</tr>
<tr>
<td>Endowment</td>
<td>184,448,599</td>
<td>113,618,275</td>
</tr>
<tr>
<td>General reserve</td>
<td>94,767,458</td>
<td>82,059,396</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>388,450,319</td>
<td>351,648,353</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sponsored program fund</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital fund</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid assets</td>
<td>42,276,055</td>
<td>3,068,500</td>
</tr>
<tr>
<td>Repairs and Maintenance reserve</td>
<td>2,119,523</td>
<td>2,119,523</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>44,395,578</td>
<td>5,188,023</td>
</tr>
<tr>
<td>Agency fund</td>
<td>57,155,393</td>
<td>61,870,398</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>514,750,695</td>
<td>483,829,032</td>
</tr>
</tbody>
</table>

Time deposits with banks amounting to Baht 16,72 million (1997: Baht 34.45 million) of the restricted fund has been pledged with a bank as a collateral against outstanding letter of guarantee issued by the bank (see Note 14).

NOTE 5 - ADVANCE DUTIES AND TAXES

These represent advance duties and tax payments to the Government of Thailand which will be subsequently refunded to the Institute in accordance with the letter of the Office of the Secretary-General to the Cabinet dated July 16, 1985. The refund of the advance is for non-Thai faculty and staff and is subject to the annual government budget of the Government of Thailand.

The details of advance duties and taxes as at June 30, are as follows:

<table>
<thead>
<tr>
<th>1998</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baht</td>
<td>Baht</td>
</tr>
<tr>
<td>Employees personal income tax</td>
<td>10,412,858</td>
</tr>
<tr>
<td>Import and tax duty</td>
<td></td>
</tr>
<tr>
<td>- Automobile</td>
<td>-</td>
</tr>
<tr>
<td>- Wine and spirits</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10,412,858</td>
</tr>
</tbody>
</table>
NOTE 7 - FIXED ASSETS

Fixed assets as at June 30, are as follows:

<table>
<thead>
<tr>
<th></th>
<th>1998 Baht</th>
<th>1997 Baht</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus development</td>
<td>34,920,340</td>
<td>34,115,706</td>
</tr>
<tr>
<td>Buildings</td>
<td>84,462,204</td>
<td>75,173,366</td>
</tr>
<tr>
<td>Furniture and equipment</td>
<td>7,482,825</td>
<td>7,071,127</td>
</tr>
<tr>
<td>Library acquisitions</td>
<td>132,139,222</td>
<td>116,040,194</td>
</tr>
<tr>
<td>Construction in progress</td>
<td>54,170,407</td>
<td>51,796,472</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,816,060,751</td>
<td>1,662,248,531</td>
</tr>
</tbody>
</table>

The Institute made the agreement to lease land with the Ministry of Finance for 30 years from January 19, 1971 to January 18, 2001 and when this lease agreement is over, the Institute can continue leasing.

Depreciation for the year amounting to Baht 69,067,110 (1997: Baht 82,542,713) has not been recorded in accordance with the fund accounting concept.

As at June 30, 1998, the Institute received a building in the approximate amount Baht 35 million as a donation. The value of building was estimated by construction work referred to the memorandum No. PP/PS/117/M dated July 16, 1999.

NOTE 8 - CONTRIBUTIONS IN KIND

This represents services donated to the Institute in the form of a retired faculty or staff of which the value is estimated on a basis in accordance with the approved Institute professional salary scale. The amounts are recognized as revenues and expenditures in the restricted general fund.

NOTE 9 - FUND BALANCES

Fund balances as at June 30, are as follows:

<table>
<thead>
<tr>
<th></th>
<th>1998 Baht</th>
<th>1997 Baht</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted fund</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>147,694,118</td>
<td>118,483,040</td>
</tr>
<tr>
<td>Endowment</td>
<td>95,258,513</td>
<td>92,102,948</td>
</tr>
<tr>
<td>General reserve</td>
<td>244,205,586</td>
<td>245,586,162</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>487,158,217</td>
<td>444,182,148</td>
</tr>
<tr>
<td>Capital fund</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed assets</td>
<td>1,816,060,751</td>
<td>1,662,248,531</td>
</tr>
<tr>
<td>Liquid assets - Unallocated</td>
<td>9,952,770</td>
<td>4,891,213</td>
</tr>
<tr>
<td>Liquid assets - Allocated</td>
<td>38,534,081</td>
<td>(41,553,206)</td>
</tr>
<tr>
<td>Repairs and maintenace reserve</td>
<td>2,119,523</td>
<td>2,119,523</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,865,717,125</td>
<td>1,627,700,061</td>
</tr>
</tbody>
</table>

NOTE 10 - INCOME AND EXPENDITURE

Incomes and expenditure of restricted fund operated at the Asian Institute of Technology Center in Vietnam were recorded based on detailed statement received, whereas those corresponding documents were normally retained in the Asian Institute of Technology Center in Vietnam, in the amount of Baht 15.72 million and Baht 28.59 million, respectively (1997: Baht 10.75 million and Baht 20.48 million).

NOTE 11 -TUITION AND FEE EXCHANGE RATE DIFFERENTIAL

This presented the excess of tuition and academic service fee income over the budget based on a fixed rate of Baht 26.5 per USD.

NOTE 12 - SALARIES AND ASSOCIATED COSTS

In the period June 30, 1998 salaries and associated costs of restricted current fund - general: included supplementary salaries in the amount of Baht 34.20 million which was from the tuition and fees exchange rate differential account (CFA) by the Executive Committee's approval.

NOTE 13 - AIT INSURED SAVINGS FUND

The Institute and its staff have jointly set up an insured savings fund scheme. The fund is contributed by staff and the Institute at the rate of 5% and 10% of basic salary, respectively. This fund is managed by Aon Consulting (Thailand) Ltd. Withdrawal and refund of the contributions and the related earnings made by staff are to comply with the rules of the Insured Savings Fund.

NOTE 14 - COMMITMENTS

The commitments as at June 30, 1998 are as follows -
- Capital commitments in respect of building construction amounting to approximately Baht 66.22 million (1997: Baht 1.44 million).
- Bank guarantees of approximately Baht 16.72 million (1997: Baht 34.45 million) issued by a bank on behalf of the Institute in respect of certain performance bonds required in the normal course of activities of the Institute.
- Letter of credit in respect of equipment purchased amounting to approximately Baht 8.48 million.

NOTE 15 - SUBSEQUENT EVENTS

The Institute has demolished the south wing of the Administration buildings as at July 3, 1998 and the value of the demolished building cannot be estimated.

NOTE 16 - UNCERTAINTY DUE TO THE YEAR 2000 ISSUE

The Year 2000 issue arises because many computerized systems use two digits rather than four to identify a year. Date-sensitive systems may recognize the year 2000 as 1900 or some other date, resulting in errors when information using year 2000 dates is processed. In addition, similar problems may arise in some systems which use certain dates in 1999 to represent something other than a date. The effects of the Year 2000 issue may be experienced before, on, or after January 1, 2000, and, if not addressed, the impact on operations and financial reporting may range from minor errors to significant systems failure which could affect an entity's ability to conduct normal business operations. It is not possible to be certain of all aspects of the Year 2000 issue affecting the entity.
<table>
<thead>
<tr>
<th></th>
<th>Unrestricted Current Fund</th>
<th>Restricted Fund</th>
<th>Sponsored Program Fund</th>
<th>Capital Fund</th>
<th>Agency Fund</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash at banks</td>
<td>7,269,960</td>
<td>20,566,283</td>
<td>90,419,002</td>
<td>90,346,386</td>
<td>72,725,349</td>
<td>27,191,105</td>
</tr>
<tr>
<td>Advanced interest and taxes (Note 6)</td>
<td>10,412,826</td>
<td>3,717,417</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts receivable and accrued income</td>
<td>1,688,131</td>
<td>9,322,223</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>1,003,212</td>
<td>1,042,472</td>
<td>63,861</td>
<td>63,861</td>
<td>1,644,733</td>
<td>83,953</td>
</tr>
<tr>
<td>Inventories</td>
<td>349,778</td>
<td>529,955</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Due from other funds</td>
<td>131,326,307</td>
<td>98,000,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed assets (Note 7)</td>
<td>1,810,000,751</td>
<td>1,662,248,531</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>44,206,644</td>
<td>44,910,095</td>
<td>527,195,252</td>
<td>553,226,729</td>
<td>86,247,998</td>
<td>86,518,000</td>
</tr>
<tr>
<td><strong>LIABILITIES AND FUND BALANCES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable and accrued expenses</td>
<td>3,505,881</td>
<td>5,104,030</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>2,186,650</td>
<td>1,293,300</td>
<td>2,937,163</td>
<td>2,285,721</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Due to other funds</td>
<td>131,226,307</td>
<td>98,000,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>5,691,531</td>
<td>6,396,360</td>
<td>440,371,175</td>
<td>109,344,581</td>
<td>779,228</td>
<td>572,752</td>
</tr>
<tr>
<td><strong>Fund Balances</strong></td>
<td>38,314,715</td>
<td>38,514,715</td>
<td>487,555,217</td>
<td>441,821,148</td>
<td>85,698,680</td>
<td>85,937,252</td>
</tr>
<tr>
<td><strong>Total Liabilities and Fund Balances</strong></td>
<td>44,206,644</td>
<td>44,910,095</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The accompanying notes are an integral part of the financial statements.*
<table>
<thead>
<tr>
<th>REVENUES:</th>
<th>Unrestricted Current Fund</th>
<th>Restricted Fund - General</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and fees:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic unit</td>
<td>288,814,631</td>
<td>351,429,779</td>
<td>136,708,833</td>
</tr>
<tr>
<td>Non-academic</td>
<td>5,243,600</td>
<td>7,834,556</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>294,058,231</td>
<td>359,264,236</td>
<td>136,708,833</td>
</tr>
<tr>
<td>Tuition &amp; fee exchange rate differential (Note 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gifts and contributions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>11,632,121</td>
<td>33,748,582</td>
<td></td>
</tr>
<tr>
<td>In-kind (Note 8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11,632,121</td>
<td>33,748,582</td>
<td>112,880,769</td>
</tr>
<tr>
<td>Grants and contracts</td>
<td>31,213,005</td>
<td>21,675,326</td>
<td>267,015,531</td>
</tr>
<tr>
<td>Sales and services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational activities</td>
<td>46,007</td>
<td>36,394</td>
<td>89,871,094</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income from investments</td>
<td>28,376,427</td>
<td>24,733,372</td>
<td>135,714,030</td>
</tr>
<tr>
<td>Auxiliary services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIT sponsored programs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical plant support</td>
<td>18,269,786</td>
<td>25,231,070</td>
<td>143,829,441</td>
</tr>
<tr>
<td>Exchange subvention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Revenues</td>
<td>396,091,038</td>
<td>369,803,414</td>
<td>936,972,718</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPENDITURES:</th>
<th>Unrestricted Current Fund</th>
<th>Restricted Fund - General</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales and associated costs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash (Note 12)</td>
<td>18,684,847</td>
<td>259,919,498</td>
<td>37,865,913</td>
</tr>
<tr>
<td>In-kind (Note 8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18,684,847</td>
<td>259,919,498</td>
<td>37,865,913</td>
</tr>
<tr>
<td>Academic units operating costs</td>
<td>206,880,117</td>
<td>22,695,711</td>
<td>178,647,298</td>
</tr>
<tr>
<td>Student related costs</td>
<td>1,587,630</td>
<td>1,685,621</td>
<td>114,121,260</td>
</tr>
<tr>
<td>Administrative support costs</td>
<td>67,827,340</td>
<td>6,941,816</td>
<td>40,111</td>
</tr>
<tr>
<td>Capital purchases</td>
<td>13,217,936</td>
<td>14,572,456</td>
<td>109,097</td>
</tr>
<tr>
<td>Campus wide services</td>
<td>87,358,278</td>
<td>57,929,476</td>
<td>34,785,941</td>
</tr>
<tr>
<td>Physical plant support costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIT sponsored programs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange subvention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other costs</td>
<td>78,232,912</td>
<td>66,121,310</td>
<td>97,807,398</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>390,918,546</td>
<td>369,321,066</td>
<td>692,732,387</td>
</tr>
</tbody>
</table>

| Excess of Revenues Over Expenditures | 1,177,492 | 780,346 | 244,240,331 | 59,968,661 | 254,417,823 | 60,839,575 |

The accompanying notes are an integral part of the financial statements.
## ASIAN INSTITUTE OF TECHNOLOGY

### STATEMENT OF CHANGES IN FUND BALANCES

**FOR THE YEAR ENDED JUNE 30, 1998 (WITH COMPARATIVE TOTALS FOR 1997)**

<table>
<thead>
<tr>
<th></th>
<th>Unrestricted Fund</th>
<th>Capital Fund</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Restricted Fund</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BAHT</td>
<td>BAHT</td>
<td></td>
</tr>
<tr>
<td><strong>Balances July 1, 1997 (Note 6)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current fund</td>
<td>30,514,715</td>
<td>116,483,080</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>82,102,846</td>
<td>24,368,162</td>
<td></td>
</tr>
<tr>
<td>Endowment</td>
<td>3,157,255</td>
<td>4,350,141</td>
<td></td>
</tr>
<tr>
<td>Reserve</td>
<td>1,662,241,531</td>
<td>4,891,211</td>
<td></td>
</tr>
<tr>
<td>Program Fund</td>
<td>41,559,206</td>
<td>1,179,810,218</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,662,241,531</td>
<td>4,891,211</td>
<td></td>
</tr>
<tr>
<td><strong>Adjustments:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sale of assets</td>
<td>(10,077,718)</td>
<td></td>
<td>(10,077,718)</td>
</tr>
<tr>
<td><strong>Additions:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excess of revenues over expenditures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(expenditures over revenues)</td>
<td>1,172,492</td>
<td>244,240,331</td>
<td></td>
</tr>
<tr>
<td>Investment income</td>
<td>1,681,409</td>
<td>16,340,536</td>
<td></td>
</tr>
<tr>
<td>Government grants and appropriations</td>
<td>218,725</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash on rest of exchange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous income and contributions</td>
<td>8,255,042</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions in kind</td>
<td>37,401,431</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Due from other fund</td>
<td>33,326,037</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,680,265</td>
<td>441,271</td>
<td></td>
</tr>
<tr>
<td><strong>Deductions:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter-fund transfer from (to)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Unrestricted Current Fund</td>
<td>-</td>
<td>1,172,492</td>
<td>1,172,492</td>
</tr>
<tr>
<td>- Restricted Current Fund</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- General</td>
<td>3,000,000</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>- Endowment</td>
<td>-</td>
<td>149,920,963</td>
<td>149,920,963</td>
</tr>
<tr>
<td>- General Reserve</td>
<td>(1,172,492)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>- Liquid Assets Capital Fund</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Allocated</td>
<td>(149,929,965)</td>
<td>(1,368,694)</td>
<td>(1,368,694)</td>
</tr>
<tr>
<td>- Repairs and Maintenance Reserve</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>- Agency Fund</td>
<td>(30,000)</td>
<td>(3,378,527)</td>
<td>(3,378,527)</td>
</tr>
<tr>
<td>Expenditure for plant facilties</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Cash</td>
<td>126,466,007</td>
<td>(12,665,684)</td>
<td>(12,665,684)</td>
</tr>
<tr>
<td>- Kind</td>
<td>37,401,431</td>
<td>(17,461,431)</td>
<td>(17,461,431)</td>
</tr>
<tr>
<td>Other cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- General</td>
<td></td>
<td>(2,859,763)</td>
<td>(2,859,763)</td>
</tr>
<tr>
<td>- Due to other fund</td>
<td></td>
<td>111,851,622</td>
<td>111,851,622</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>(1,172,492)</td>
<td>(3,326,037)</td>
<td>(3,326,037)</td>
</tr>
<tr>
<td><strong>Balances June 30, 1998 (Note 9)</strong></td>
<td>38,314,715</td>
<td>167,684,118</td>
<td>205,998,833</td>
</tr>
</tbody>
</table>

The accompanying notes are an integral part of the financial statements.
THE BOARD OF TRUSTEES

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Federal Ministry for Economic Cooperation and Development (BMZ)
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NC His Majesty's Principal Private Secretary
PPC The Grand Palace
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Government of Pakistan
Islamabad, Pakistan

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Former Deputy Prime Minister
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1988 AIT Annual Report

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Bangkok, Thailand

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PPC Asian Institute of Technology
SRC Pathumthani, Thailand

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Deputy Director General
Department of International Cooperation
State Education Commission of the People’s Republic of China
Beijing, PRC

Note:
The list provides information on the Trustees’ positions and membership in Standing Committees as follows:

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EC Executive Committee
FRC Faculty Relations Committee
HDC Honorary Degrees Committee
NC Nominating Committee
PPC Policy and Planning Committee
SRC Student Relations Committee

Secretary:
Dr. Roger A. Hawkey
AIT

*List updated in January 1999

Obituary

Dr. Oscar B. Mapua, Life Trustee since 1966 and former Chair of the Board (February 1974 to January 1975), passed away on 17 March 1998 in Manila, Philippines.

Dr. Mapua served as President of the Mapua Institute of Technology in Manila, the alma mater of many Filipino students who later joined AIT for their further studies.

Dr. Mapua
FULL-TIME FACULTY

(Full-time faculty members are listed alphabetically. The italized entries are abbreviations of their respective Schools or Academic Centers.)

Nitin V. Aftzulpurkar
B.Eng., Foona; Ph.D., Canterbury.
Associate Professor (SAT)

Kazel Mohuddin Ahmed
M.Sc., Leningrad; Ph.D., Univ. of Newcastle.
Associate Professor (SAT)

A.T.M. Nurul Amin
B.A. (Hons.), M.A., Dhaka;
M.A., Ph.D., Manitoba.
Professor (SERD)

Ali P. Annachhaire
B.Tech., BT Karnpur; Ph.D., IIT Bombay
Associate Professor (SERD)

Ray W. Archer
B.A. (Hons.), Sydney; M.R.A.P.I.
Professor (SERD)

A.S. Balasubramaniam
B.Sc., Ceylon; Ph.D., Cambridge.
Chair Professor (SCE)

Amrit Bart
B.A., Eathrn College;
M.A., M.S., Ph.D., Auburn.
Assistant Professor (SERD)

Dentcho N. Batanov
B.Sc., M.Sc., Ph.D., Technical Univ., Sofia.
Associate Professor (SAT)

Clemens Bechter
B.S., Univ. of Cologne;
M.B.A., Ph.D., Univ. of St. Gall.
Assistant Professor (SOM)

Dennise T. Bergado
B.S.C.E., Mindanao State; M. Eng., AIT;
Ph.D., Utah State.
Professor (SCE)

S.C. Bhattacharya
B.E. (Mech.), M.E., Roorkee;
Ph.D., Cambridge.
Professor (SCE)

Erlk Bohez
M.Eng., State Univ. of Ghent.
Associate Professor (SAT)

Betina Böchel
M.Sc., Rutgers Univ.;
M.A., Univ. of Connecticut;
Ph.D., Univ. of Geneva.
Assistant Professor (SOM)

Ginette Chamart
Maitrise, DEA INALCO, Paris.
Instructor (CLET)

Marie-France Champagne
Maitrise, DEA Sorbonne.
Assistant Professor (CLET)

Chotchoi Charoenngam
B.Eng., (Hons.), KMITL, M.Sc., Kansas;
Ph.D., Texas (Austin).
Associate Professor (SCE)

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Ph.D., Newcastle.
Associate Professor (SERD)

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M.Sc., Rutgers.
Associate Professor (CLET)

Reldar Dale
M.Phil., D.PHI, Oslo.
Associate Professor (SCE)

Glap Van Dung
Dipl., INSIN, Saclay;
Ph.D., Pantheon-Sorbonne, Paris 1.
Associate Research Professor (SERD)

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B.S., C.I.S.S., I.E.T.A.
Ph.D., Paris VIII Univ.
Associate Professor (SOM)

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Ph.D., Univ. of Western Ontario.
Chair Professor in Applied Science (SERD)

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Associate Professor (SAT)

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Assistant Professor (SAT)

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Professor (SCE, SERD)

Dudil Gaa-Cloough
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Ph.D., California (Davis).
Professor (SERD)

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D. Eng., AIT.
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Professor (SOM)

Joyot P. Gupta
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D.Tech., Manchester.
Professor (SOM)

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Associate Professor (SOM)

John B. Hambrey
Assistant Professor (SERD)

Gunnar Kjer Hansen
M.Sc., Ph.D., Dr. Science, Foyal Veterinary & Agriculture Univ., Denmark.
Associate Professor (SERD)

Kiyoshi Honda
Associate Professor (SERD)
FULL-TIME FACULTY
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B.Sc., Ceylon; Ph.D., Cambridge. Chair Professor (SCE)

Amrit Bart
B.A., Earlham College; M.A., M.S., Ph.D., Auburn. Assistant Professor (SAT)

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S.C. Bhattacharya
B.E. (Mech.), M.E., Roorkee; Ph.D., Cambridge. Professor (SERD)

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Betina Böcher
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Ginette Cernart
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Marie-France Champagne
Maître, DEA Sorbonne. Assistant Professor (CLET)

Chotcha Charoenangam
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Surapon Chitarattanarong
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B.A., Acadia; B.Ed., Mount St. Vincent; M.Sc., Rutgers. Associate Professor (CLET)

Reidar Dale
M.Phil., D.Phil., Oslo. Associate Professor (SERD)

Giac Van Dang
Dipl., INSTN, Saclay; Ph.D., Panthéon-Sorbonne, Paris I. Associate Research Professor (SERD)

Jean-Pierre Delce
B.Sc., C.E.S.S., D.E.A., Ph.D., Paris VIII Univ. Associate Professor (SERD)

Harvey Demaine
B.A. (Hons.), Oxford; M.Sc., Ph.D., London. Associate Research Professor (SERD)

Nicholas Dimmott
B.A., M.A., San Francisco State; Ph.D., Univ. of Western Ontario. Assistant Professor (CLET)

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Phan Minh Dung
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Barbara Eckhardt
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Henz Eckhardt
Dipl. Ing., Technical Univ., Darmstadt; Dr.-Ing., Ruhr Univ., Bochum. Associate Professor (SCE, SERD)

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Her Royal Highness Princess Maha Chakri Sirindhorn is an Honorary Faculty Member of the Institute associated with the Space Technology Applications and Research Program.

Peter Edwards
B.Sc., Liverpool; Ph.D., Univ. of Texas (Austin). Research Professor (SERD)

Aptsi Elumnoh
B.Sc., Kasetsart; M.Sc., Sheffield; Ph.D., North Carolina State. Associate Professor (SERD)

Tepio Erke
M.Tech., Hokkaido Univ. of Tech. Associate Professor (SAT)

Vatcharaporn Eskchakul
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Yanston on Externalities in Developing Countries; Investigators: T. Lelievre, B. D. Thanh; Sponsor: MAEF, CEERD

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Asian Regional Workshop on Environmental Technology (To be held on 27-29 January 1999); Investigators: A. P. Annapure; Sponsor: Sida-GAREC

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Genetic Improvement of Indian and Common Carp for Aquaculture (Phase II); Investigators: G.C. Mair, D.J. Kennan, Y. Basavaraj; Sponsor: DRIF - Fish Genetics Program

Support to AIT Aquaculture Outreach Program in Indochina and Northeast Thailand; Investigators: H. Demaline, M. Korn, H.B. Nielsen, P. Edwards; Sponsor: Danida

Support to Regional Aquaculture Development; Investigators: P. Edwards, H. Demaline, J.B. Hambray, D. Little; Sponsor: DRIF, UK

Genetic Diversity of the Silver Barb in Southeast Asia; Investigators: G.C. Mair, D.O.F. Skibinski; Sponsor: DRIF - Holbeck Program

Mangrove Web Page; Investigators: J. Hambray; Sponsor: CP Aquaculture
Socio-economic Analysis of the Dissemination and Impact of Genetically Male Tiliapia In the Philippines; Investigators: G.C. Malfr, G.R. Clarke; Sponsor: DFID - Fish Genes Program

Physiological Basis of Sex Determination in the Tiliapia Oreochromis niloticus L.; Investigators: G.C. Malfr, S. Watts; Sponsor: US Dept. of Agriculture through Univ. of Alabama at Birmingham

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Pond Dynamics Collaborative Research Support Program - Phase II; Investigators: G.K. Lin, P. Edwards; Sponsor: USAID


Effect of Tillage Practices on Hydraulic Conductivity, Cone Index, Infiltration and Crop Yield in Bangkok Clay Soil; Investigators: V.M. Saloch, G. Singh, M.H. Rahmati; Sponsor: ICARDA, Iran

Decision Support System for Soil Compaction in Agricultural Soil; Investigators: V.M. Saloch, E. Canellas; Sponsor: CEC, AIT

Int. Workshop on Information Management for Agricultural Research (to be held in November 1999); Investigator: G. Singh; Sponsor: ISNAR, The Hague

Quality Evaluation of Thai Rice; Investigator: A. Noomhorm; Sponsor: Chit Meng Co., Ltd., Thailand

Modification of Rice Flour for Rice Noodle; Investigator: A. Noomhorm; Sponsor: Thailand Toray Science Foundation

Development of a Manual for Application of GMP and HACCP to Food Industries; Investigator: A. Noomhorm; Sponsor: Thai Industrial Standards Institute

Standardization of Quality Evaluation Methods for Selected Fruits and Vegetables; Investigator: A. Noomhorm; Sponsor: Ministry of Industry, Thailand

Irradiation of Meat Products in Combination with Packaging; Investigator: A. Noomhorm; Sponsor: IAEA, Vienna

Experimentation of a Fluidized Bed Coffee Roaster; Investigator: J. C. Vincent; Sponsor: CIRED

Evolution of Volatile Component during Roasting; Investigator: J. C. Vincent; Sponsor: CIRED

Gender and Health in Rural and Urban Nepal; Investigators: B. Earth, S. Jamwal; Sponsor: NCRAD (seed money)

Social Impact Assessment of Phoenix Pulp and Paper Factory, Khon Keen Province, Thailand; Investigators: B. Earth, S. Doorong (with Khon Keen Univ.); Sponsor: AIT Research Institution Grant

Cross-Cultural Research on Women/Gender and Development in Asia; Investigators: G. Kelkar, M. Osawa; Sponsor: National Women’s Education Center, Japan

Matrilineral Societies: Gender Relations and Economic Development; Investigators: G. Kelkar, Sponsors: Netherlands Govt., HIVOS, IFAD

ILC-AIT Joint Research on Gender Impact of the Economic Crisis in Five Countries of Southeast Asia; Investigators: G. Kelkar, M. Osawa; Sponsor: ILC

Indigenous Asia: Resources Management, Technology and Gender Relations; Investigators: G. Kelkar; Sponsors: Netherlands Govt., HIVOS and IFAD

AID-UNICEF Project of Cooperation; Investigators: H. Demaine, H.D. Kemmler, S. Fongquan, R. Dale; B.W.E. Wickramanayake, S. Sirisup; Sponsor: UNICEF

Impact of Globalization on Urban Development in Asia; Investigator: R.S. Mohn; Sponsor: UMC

Urban Indicators to Establish a Quality-of-Life Index and Develop an Urban Infrastructure Assessment Model; Investigators: A. Maha, Yap Kho Sheng; Sponsor: UMC


Urban Land Pooling/Readjustment Research Project: Transferring LPDR to Developing Countries of Asia; Investigator: R.W. Archer; Sponsor: Metropolitan Research Trust, et al.


Small Interlocking Brick; Investigators: B. Lefebvre, G. Shapill, M. Ushijima; Sponsor: Habitech Center

Compressive Strength of Concrete Bricks; Investigators: B. Lefebvre, G. Shapill, M. Ushijima; Sponsor: Habitech Center

Earthquake Testing of Habitech Building System; Investigators: B. Lefebvre, G. Shapill, M. Ushijima; Sponsor: Habitech Center

Schools - Bangladesh; Investigators: B. Lefebvre, G. Shapill, M. Ushijima; Sponsor: Habitech Center

Primary Schools - Laos; Investigators: B. Lefebvre, G. Shapill, M. Ushijima; Sponsors: Japanese Embassy Laos (Grass Root Fund), Sanpo Int. Corp.

Medical Service Centers - Laos; Investigators: B. Lefebvre, G. Shapill, M. Ushijima; Sponsors: Japanese Embassy Laos (Grass Root Fund), Sanpo Int. Corp.


Primary School - Nepal; Investigators: B. Lefebvre, G. Shapill, M. Ushijima, S. Sharma; Sponsors: ODA Japan, Sanpo Int. Corp.
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Sponsor: ILO

Research and Development of Chitin and Chitosan Membrane for Bio-separation
Investigator: S. Chandrakaran, W. Sirom, Sponsor: MTEC

Collaboration between French and Indochine Bioprocess Industries
Investigator: S. K. Rackhult, W. Xiadong, Sponsor: GNIAD

Mapping of Natural Resources and Ministry of Agriculture and Cooperatives Properties Administration: Investigator: K. Naschewski, Sponsor: Govt. of Finland

NOAA HRPT Receiving Station
Investigator: K. Honda, S. Lertum, Sponsor: GAMES Project, ACG/RS


Japanese Satellite Data Promotion Project

Updting Mapping Information in Bangkok/Aayutthaya Area using Japanese Satellite (ADEOS AVNIR) Data and GIS
Investigator: S. Mural, K. Honda, M. Harakita, M. Lascou, Sponsor: Remote Sensing Technology Center of Japan

Realtime Kinematic GPS Station
Investigators: K. Honda, S. Ganeshkumar, Sponsor: Remote Sensing Technology Center of Japan


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Investigator: H. Paul
Sponsor: Colombian Institute for Scientific and Technological Development

Forum for Enterprise Management
Investigators: Lail M. Johri, E. Herbolsheimer
Sponsor: EC
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