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ASIAN  
INSTITUTE  
OF  
TECHNOLOGY



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The Institute's 1987 Annual Report  
has been prepared by the Office of  
Information Services.

Editor: Teresita M. Padilla.

Staff: Narnipha Vimuktanon, Editorial  
Assistant; Apichart Ngarmnyom,  
Artist; Paitoon Tanapong, Photographer.

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As regular readers of the annual report will gather, both academically and financially, 1987 has been one of our best years ever.

Given the independent status of the Institute, it is appropriate to start this message with a brief comment on its financial stability, and to note some factors underlying its optimistic position at present.

First, our major donors are themselves emerging from a period of slight recession or financial uncertainty. They have a growing confidence in the Institute team and most importantly in the dedication of its alumni, and are more prepared and willing to commit generous donations on a three- to five-year forward time scale.

The excellent work of our Development Office, particularly the efforts of the Vice President for Development, in presenting the Institute to donor agencies has carried us through a period of "donor fatigue", disillusionment with multilateral aid, and aversion to "institute building" general support.

Very significantly the work of all faculty and staff, so ably led by the Vice President for Academic Affairs, in attracting sponsored research, short courses, and external scholarships has increased our income from tuition fees beyond budget expectations.

Particularly significant in 1987 was the growth in research activity. Doctoral student numbers have reached the 10% target figure and sponsored research exceeded US\$ 2 million. Papers presented in refereed journals and conferences are now as high per capita as in an engineering school of quality in any developed country. Most of all, the work (by the nature of its sponsorship) is applicable to the needs of Asia and is not aimed solely at academic recognition.

The Institute is doing this with general consensus and based on careful growth from established expertise.

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## PRESIDENT'S MESSAGE



### NEAR AND FAR

The International Forum on the Establishment of the School of Management, held at the AIT Center Auditorium.

In Cologne, the Federal Republic of Germany with Prof. R. Pama, AIT Vice President for Development, for the signing of a new cooperation agreement with CDG. Second from right and right are Mr. K. Rachwalsky, Executive Director of CDG e.V., Cologne, and Mr. F.G. Rondé, Head of the CDG Department for Development Cooperation.

Turning to academic matters, the year saw considerable progress in the development of programs related to natural resources, computer-related manufacturing technology, and management. Details are presented in the report, and the Institute is now well set on its path to bring, by the early 1990s, four firmly established academic areas namely,

- Infrastructure Engineering,
- Agricultural and Natural Resource Engineering,
- Management and Planning, and
- Manufacturing Systems Engineering.



#### THEN AND NOW

With some graduates at the 51st graduation in December. Front row, middle and right, are Mr. Song Hai from the People's Republic of China who was conferred a Master's degree in Industrial Engineering and Management, and Prof. Gajendra Singh, AIT Vice President for Academic Affairs.

In conversation with Prof. Singh and Ms. Euay Singhakul, elected President of the AIT Student Union in September 1987.

We have given particular attention through 1987 to improving relations with our Thai friends in as many ways as possible.

One event which very much increased public awareness of AIT was the award of the first AIT Gold Medal for Outstanding Leadership in Rural Development to His Majesty King Bhumibol Adulyadej of Thailand. This proved to be a wonderful event, with the Institute being able to express its genuine and deep admiration and affection for His Majesty in a way that brought everybody a great deal of honor.

Partly as a result of the visit of His Majesty, the Institute is becoming increasingly involved in projects, committee work and inter-institutional collaboration. As well as becoming involved in projects suggested by His Majesty, the Institute is partnering Thai universities in assisting the "Greening of the North East" project being conducted for His Majesty by the Royal Thai Army. Thus the Institute's thrust in rural development is now well coordinated with related activities in Thailand.

All in all, 1987 has been an exciting and rewarding year. I hope that readers of this report can share these sentiments, and also the optimism with which we regard the future.

Alastair M. North









AIT GOLD MEDAL  
FOR OUTSTANDING  
LEADERSHIP IN  
RURAL DEVELOPMENT

**AWARD TO  
H.M. KING  
BHUMIBOL  
ADULYADEJ  
OF THAILAND**



The AIT Gold Medal Award was presented to His Majesty on July 21, 1987 on the occasion of His 60th birthday anniversary on December 5, 1987, and in recognition of His outstanding work in rural development. Dr. Thanat Khoman, Chairman of the AIT Board of Trustees, presented the AIT Gold Medal to His Majesty.

The AIT Gold Medal Award is an expression of gratitude for His Majesty's interest in and support for the Institute, and of sincere appreciation of His Majesty's continuing efforts in rural development, a field in which AIT seeks to make enduring contributions through its teaching and research.



## ROYAL ADDRESS OF HIS MAJESTY THE KING



I feel very pleased and deeply honored to be the first person to receive this medal of honor from the Asian Institute of Technology. Furthermore, the Institute has also presented me with a certain sum of money to support my work. I would like to express my sincere thanks and appreciation on this occasion.

I have known this Institute since the beginning of its establishment as a Graduate School of Engineering at Chulalongkorn University. It then became a fully-established Institute of Technology in 1967. For the past twenty years, the Institute has carried out its work in all fields with accomplishment and success, resulting in extensive benefits in the areas of research and development as well as in other spheres. An important fact which should be mentioned is that the Institute has been able to function satisfactorily in an advisory and a verifying role for technological data for the Thai Government in its initiation of many development projects. Another area concerns the way that the Institute has been able to teach and inculcate in its students the basic

principle or foundation of higher education, so that each one is conscious of the fact that progress can only be achieved when it is effected in both theory and application. Also, a theory or hypothesis can gain the fullest benefits only when it is correctly applied, taking care to conform with the people's ways of life, their thoughts and beliefs as well as their cultures and the true conditions of the various regions.

I would like finally to affirm my sincere admiration of the Asian Institute of Technology as well as to give my best wishes to the Institute for its greater development, progress and prosperity.

His Majesty presided at the 18th graduation ceremony on May 5, 1975.

On February 14, 1973, His Majesty officially opened the AIT campus in Rangsit, and was escorted by retiring AIT President, Dr. Milton Bender.

On May 4, 1968, His Majesty presided at the first graduation in which AIT conferred its own degrees. His Majesty was welcomed on his arrival at the AIT site on the Chulalongkorn University campus by Dr. Milton Bender, AIT President, and Dr. Puey Ungphakorn, Chairman of the Board of Trustees.

Prior to the graduation, His Majesty toured the hydraulics laboratory and was guided by Dr. Anat Arbhabhrama, Assistant Professor of Hydraulic Engineering.







Following the AIT Gold Medal presentation ceremony, His Majesty toured the AIT campus and observed various research activities. Top photo shows AIT President North explaining a scale model of the Institute's campus plan. Middle photos show Dr. Kaew Nualchawee of the INRDM program describing the benefits of applied remote sensing, Dr. Pichai Nimityongskul of the SEC Division explaining the production of cement from lime and rice husk, and Mr. Sompol Boonthanon of the EE Division showing His Majesty the Institute's mobile environmental laboratory.

## ROYAL DEVELOPMENT STUDY CENTERS

The agronomic research sponsored by His Majesty, in the grounds of Chitrlada Villa and also in the Royal Development Study Centers, acknowledges an integrated approach to development. His Majesty's development strategies are at one not only with the physical but also with the cultural landscape.

The Royal Development Study Centers were designed to stimulate farmers' intellectual curiosity and to satisfy their need for information by combining development activities in all relevant fields in one single location. The centers are geared to demonstrate, educate, instruct, and train the farmers and to disseminate information to the general public.

His Majesty the King has likened each Royal Development Study Center to a "living natural museum" where "briefs on development" are routinely offered. In this manner, the centers are envisaged to become effective models for efficient management of development activities.

The Royal Development Study Centers are located in the following areas.

- Huay Hong Khrai**  
Doi Saket District  
Chiang Mai Province
- Phu Phan**  
Muang District  
Sakon Nakhon Province
- Khao Hin Son**  
Phanom Sarakham District  
Chachoengsao Province
- Ao Khung Kraben**  
Tha Mai District  
Chanthaburi Province
- Huay Sai**  
Cha-am District  
Petchburi Province
- Phikunthong**  
Muang District  
Narathiwat Province

# ACADEMIC ENVIRONMENT

## DEVELOPMENTS

### ACADEMIC AREAS

The Institute is now well set on its path to establishing four academic areas by the early 1990s. These are

- Infrastructure Engineering
- Agricultural and Natural Resource Engineering
- Management and Planning
- Manufacturing Systems Engineering

The Institute's recognition of the importance of natural resources is reflected in the establishment of two interdisciplinary and inter-divisional programs. The Agricultural Land and Water Development Program is jointly offered by the Division of Agricultural and Food Engineering and the Division of Water Resources Engineering. The Interdisciplinary Natural Resources Development and Management (INRDM) Program incorporates the former Asian Regional Remote Sensing Training Center, now designated as the Remote Sensing Laboratory, as its natural resources assessment and monitoring component. The first batch of Master's students will be admitted in May 1988.

Management components have been strengthened in individual technical subjects and through the School of Management, which was officially established in October.



Manufacturing Systems Engineering is taking shape from three embryonic components, particularly involving CAD/CAM, in the Division of Computer Science, the Division of Industrial Engineering and Management, and the Regional Computer Center.

The initial focus of these efforts is to create an understanding of CAD/CAM and its applications in manufacturing technology. With the addition of numerical controlled machine tools and their integration into computer integrated manufacturing (CIM) laboratories, the basis will be in place for attractive joint programs with industry.

Management of Technology will be the priority area in the first phase of development of the School of Management, based on conclusions drawn up at an international forum of subject experts and donor representatives, held at the Institute in September. The concept for the School of Management was approved by the Board of Trustees at its annual meeting in January 1987.

Dr. Georges Hirsch, the first faculty member with full time commitment to the School of

### SCHOOL OF MANAGEMENT



Management, was appointed in November as Project Manager responsible for curriculum development and promotional activities.

A building to house the School of Management, suitable for a small student intake in September 1989, is now assured with the completion of the Agricultural and Food Engineering (AFE) Building in mid-1988. Construction of the AFE Building was started during the second half of 1987.

## FIELDS OF STUDY

A field of study is an academic subject area in which teaching and research form a major thrust in a degree program. Each field of study should contain a certain number of required courses and an adequate selection of elective courses. Fields of study should be sufficiently broad to allow the students some flexibility to follow a particular area or a combination of areas of specialization.

A field of study is either a divisional subject area or an interdisciplinary academic activity in which two or more divisions combine together to offer a degree program.

### NEW FIELDS OF STUDY TO BE IMPLEMENTED IN 1989 and Implementing Division or School

|   |                      |
|---|----------------------|
| Agricultural System                     | AFE Division         |
| Rational Use of Energy                  | ET Division          |
| Construction Engineering and Management | SEC Division         |
| Management of Technology                | School of Management |

New academic activities to be introduced during the 1989-91 Institute Plan Period are Electronics, Manufacturing Systems and Biotechnology.

Academic activities in Material Science and Offshore/Ocean Engineering are being considered.

### EXISTING FIELDS OF STUDY and Implementing Division or Program

#### DIVISIONAL

|   |              |
|---|--------------|
| Agricultural Machinery and Management<br>Post Harvest Technology<br>Aquaculture         | AFE Division |
| Computer Technology   | CS Division  |
| New and Renewable Sources of Energy   | ET Division  |
| Water and Wastewater Engineering<br>Environmental Technology and Management             | EE Division  |
| Soil Engineering<br>Engineering Geology and Applied Geophysics                          | GTE Division |
| Urban Planning, Land and Housing Development<br>Rural and Regional Development Planning | HSD Division |
| Industrial Engineering and Management   | IEM Division |
| Structural Engineering and Construction   | SEC Division |
| Hydraulic and Coastal Engineering<br>Water Resources Development                        | WRE Division |

#### INTERDIVISIONAL

|  |               |
|--|---------------|
| Energy Planning and Policy                   | ET Division   |
| Transportation                               | GTE Division  |
| Agricultural Land and Water Development      | ALWD Program  |
| Natural Resources Development and Management | INRDM Program |

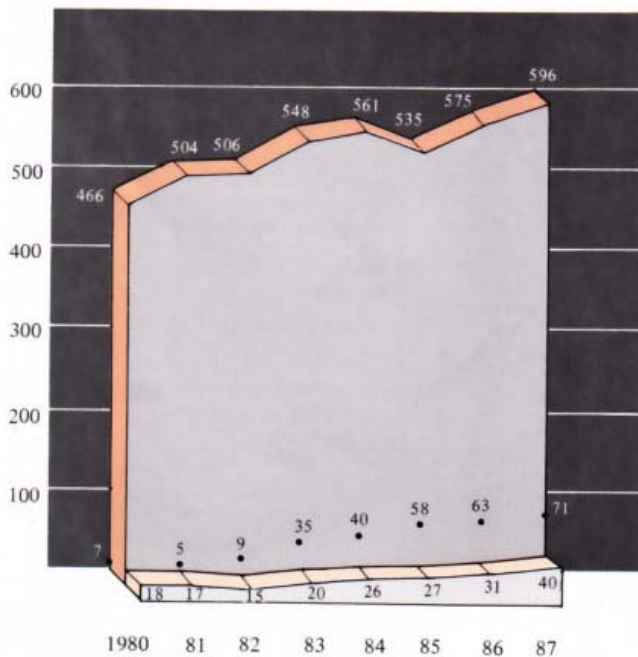


# ENROLLMENTS

Student enrollment during the three terms in 1987 averaged an annual total of 667 compared with 638 in 1986. Of the total enrollment in 1987, 11 per cent was accounted for by the Program in Computer Applications Development (PCAD) of the Regional Computer Center, the remote sensing course of the Interdisciplinary Natural Resources Development and Management Program, and the Pre-Master's English Program of the Language Center.

| Enrollment Distribution 1987 |          |        |       |
|------------------------------|----------|--------|-------|
| Term                         | Division | Center | Total |
| January                      | 599      | 62     | 661   |
| May                          | 598      | 76     | 674   |
| September                    | 592      | 74     | 666   |
| Average                      | 596      | 71     | 667   |

Average Annual Enrollment in Regular Academic Programs 1980-87



Enrollment in the Doctoral programs continued to grow, reaching an annual average of 40 in 1987 compared with 31 in 1986. Forty-nine Doctoral students were enrolled in the September 1987 term, representing 9 per cent of the total enrollment in regular degree programs during that year.

- Enrollment in Master's Degree, Diploma, Certificate and Special Programs.
- Enrollment in Program in Computer Applications Development (PCAD), Remote Sensing and Pre-Master's English Program.
- Enrollment in Doctoral Programs.



The majority of degree and diploma students and short-course participants come from the region stretching from Iran in the West to the Republic of Korea in the North and Papua New Guinea in the South. Many have several years of working experience in governments and industries in the region.

The full time student enrollment in 1987 was more than 600, with the majority of students coming from Thailand, the Philippines, the Republic of China, India, Indonesia and Sri Lanka.



**Number of Students Enrolled by Country 1987**

| Country          | Term       |            |            |
|------------------|------------|------------|------------|
|                  | Jan        | May        | Sept       |
| Bangladesh       | 28         | 23         | 28         |
| Bhutan           | 3          | 3          | 1          |
| Brunei           | 2          | 2          | 2          |
| Burma            | 8          | 9          | 8          |
| Ethiopia         | 1          | 1          | 1          |
| FRG              | 1          | 1          | 1          |
| Ghana            | —          | —          | 1          |
| Honduras         | 1          | 1          | 1          |
| Hong Kong        | 12         | 11         | 11         |
| India            | 50         | 53         | 49         |
| Indonesia        | 15         | 29         | 47         |
| Iran             | —          | 2          | 2          |
| Japan            | 8          | 5          | 7          |
| Kenya            | 1          | 1          | 1          |
| RoK              | 11         | 11         | 12         |
| Malaysia         | 44         | 38         | 37         |
| Nepal            | 55         | 39         | 39         |
| Pakistan         | 40         | 39         | 33         |
| Papua New Guinea | 1          | 1          | 1          |
| PRC              | 34         | 37         | 42         |
| Philippines      | 76         | 84         | 68         |
| RoC              | 62         | 50         | 54         |
| Singapore        | 3          | 5          | 1          |
| Sri Lanka        | 44         | 44         | 48         |
| Tanzania         | 2          | 2          | 2          |
| Thailand         | 134        | 142        | 130        |
| Vietnam          | 13         | 17         | 21         |
| <b>Total</b>     | <b>649</b> | <b>650</b> | <b>648</b> |

Excluding Pre-Master's English Program.

# GRADUATIONS

Regular doctoral students must complete all the requirements for the degree within five years of advancement to candidacy.

Successful students whose first degree (Bachelor's degree or equivalent) is in an engineering subject qualify for the degree of Doctor of Engineering; other students qualify for the degree of Doctor of Technical Science.

To qualify for the degree of Master of Engineering or Master of Science, a student must satisfactorily complete either a program of coursework (which includes an independent study project), or a less extensive program of coursework and a thesis.

The Institute offers Diploma programs to provide the opportunity for study and advanced training on defined topics.



**Total Graduates by Degree Awarded**

| M. Eng. | M. Sc. | D. Eng. | D. Tech. | Dipl. |
|---------|--------|---------|----------|-------|
| 238     | 88     | 4       | 2        | 3     |
| Total   |        |         |          | 335   |

**Total Graduates by Division**

|      | Degrees |       |        |         |       |
|------|---------|-------|--------|---------|-------|
|      | M.Eng.  | M.Sc. | D.Eng. | D.Tech. | Total |
|      | AFE     | 26    | 24     |         |       |
| CS   | 12      | 15    | 1      | 1       | 29    |
| ET   | 31      | 5     | 1      |         | 37    |
| EE   | 26      | 6     | 1      | 1       | 34    |
| GTE* | 38      | 7     |        |         | 46    |
| HSD  | 3       | 26    |        |         | 29    |
| IEM  | 29      | 5     |        |         | 34    |
| SEC  | 39      |       |        |         | 39    |
| WRE* | 34      |       | 1      |         | 37    |

\*AIT Diploma: GTE, 1; WRE, 2



### Total Graduates by Country

|             | Degrees |       |         |
|-------------|---------|-------|---------|
|             | M.Eng.  | M.Sc. | * Total |
| Bangladesh  | 16      | 2     | 18      |
| Burma       | 2       | 2     | 4       |
| Brunei      | 1       |       | 1       |
| Ethiopia    |         | 1     | 1       |
| Honduras    | 1       |       | 1       |
| Hong Kong   | 6       | 1     | 7       |
| India       | 19      | 2     | 21      |
| Indonesia*  | 5       | 3     | 9       |
| Japan*      | 4       | 1     | 6       |
| RoK*        | 4       | 2     | 7       |
| Malaysia    | 13      | 4     | 17      |
| Nepal       | 19      | 6     | 25      |
| Pakistan    | 20      | 2     | 22      |
| PRC         | 9       | 10    | 19      |
| Philippines | 28      | 13    | 41      |
| RoC         | 32      | 6     | 38      |
| Singapore   | 2       |       | 2       |
| Sri Lanka   | 19      | 5     | 24      |
| Tanzania*   |         |       | 2       |
| Thailand*   | 35      | 23    | 62      |
| Vietnam     | 3       | 5     | 8       |



\* Indonesia, D.Tech., 1  
 RoK, D.Tech., 1  
 Japan, Diploma, 1  
 Tanzania, Diploma, 2  
 Thailand, D.Eng., 4

### GRADUATION AWARDS

Graduation award recipients are selected by faculty in the academic divisions, based on their excellent thesis/research study grade and a significantly high GPA. To distinguish between two or more candidates for a graduation prize, an evaluation of a seminar presentation may be used as a third criterion.

|                                   | April                                     | August                               | December                          |
|-----------------------------------|---|--------------------------------------|-----------------------------------|
| <b>HISAMATSU PRIZE</b>            | Sivapragasam Kugaprasatham (EE) Sri Lanka | Rolando S. Custodio (ET) Philippines | Huyn Ngoc Trien (WRE) Vietnam     |
| <b>INSTITUTE PRIZE</b>            | Ganesh Rasagam (GTE) Malaysia             |                                      | Pramod Kumar Adhikari (HSD) Nepal |
| <b>NORSK DATA PRIZE</b>           |   | Gerardo S. Trinidad (CS) Philippines |                                   |
| <b>TIM KENDALL MEMORIAL PRIZE</b> | Chau Kam-Tim (SEC) Hong Kong              | Heng Fook Hai (AFE) Malaysia         | Do Ba Kang (IEM) Vietnam          |

## HONORARY DEGREES

An Honorary Degree of Doctor of Technology was conferred on Dr. Chaovana na Sylvanta of Thailand, in recognition of his leadership in the development of engineering and technological industries and his contributions to the development and management of numerous scientific and engineering projects in his country.

Dr. Chaovana has been Privy Councillor to His Majesty King Bhumibol Adulyadej of Thailand since 1975. He is Chairman of the Board of Directors of the Electricity Generating Authority of Thailand (EGAT) and the Petroleum Authority of Thailand.



Mr. James A Linen, recipient of an Honorary Degree of Doctor of Technology and a charter and life member of the Board of Trustees, passed away on February 2, 1988. He was conferred his Honorary Degree by the Chairman of the Board, Dr. Thanat Khoman, at a ceremony held in November 1987 in the USA.

Mr. Linen was a most respected figure in publishing and served as Publisher, President and Chairman

## IN MEMORIAM



of TIME, Inc. from 1945 to 1973. Due to his genuine affection for Thailand and his deep interest and involvement in its development, Mr. Linen was invited to join the AIT Board of Trustees, when the Institute severed its ties with the now-defunct South East Asia Treaty Organization and became an independent post graduate school of engineering.

## GRADUATION ADDRESSES

**"Today technology misused threatens global society on many fronts. But technology is but a tool in man's hands. Properly used in the service of mankind it holds out a Utopian promise."**

Dr. Chaovana na Sylvanta, at the 49th graduation ceremony on April 16.

**"The primary responsibility for promoting technology in relation to development needs must rest with the countries themselves. International institutions can only supplement, not supplant, national effort."**

Mr. M. Narasimham, Vice President for Operations of the Asian Development Bank, at the 50th graduation ceremony on August 20.

**"It is visionary to realize that in the long run, realism in economics and politics pays. It is also visionary to realize that there is more in the world: there are human rights and there is human dignity; there are cultural diversity and cultural development and there are loyalty and solidarity."**

Mr. Peter Dekker, Managing Director of Philips Electrical Company of Thailand, at the 51st graduation ceremony on December 17.



# FACULTY AND INTERNATIONAL ACADEMIC AND RESEARCH STAFF

## PROMOTIONS

### Full Professor

N.J.D. Lucas 1 July

### Associate Professor

D.T. Bergado 1 July  
 Apisit Eiumnoh 1 July  
 W.E.J. Tips 1 July  
 K.L. Wee 1 July  
 Vilas Wuwongse 1 July

### Assistant Professor

Kanchana Kanchanasut 1 July

## APPOINTMENTS

### Professor

W.K. Foell 8 May

### Associate Professor

B. Chateau 1 Oct  
 B. Fleutiaux 1 Oct  
 S.G. Hirsch 1 Oct  
 H. Inamura 5 Aug  
 Sritawat Kittipornchai 9 Apr  
 C. Kwei Lin 1 Mar  
 R. Loof 1 June  
 V.V.N. Murty 9 Mar  
 K.S. Yap 1 July

### Assistant Professor

A.T.M. Nural Amin 22 Jan  
 Preecha Kamronrithisorn 1 Mar  
 J. Kuwano 12 May  
 G.N. Paudyal 2 Jan  
 C. Peacock 28 Jan  
 Noppadol Phienweja 6 May  
 Ram M. Shrestha 1 Apr  
 T. Ueda 6 Apr  
 K. Yamamoto 12 May

### Visiting Faculty Member

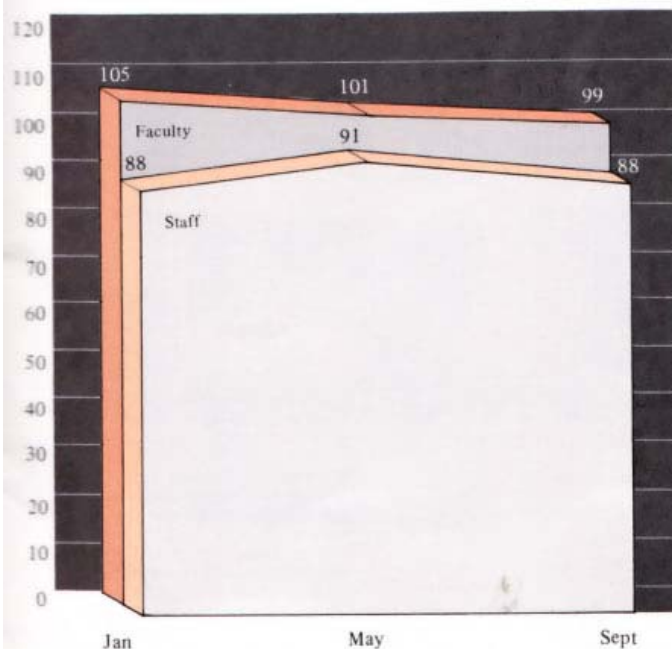
#### Over One Year

Kyu-Hong Ahn 20 May  
 P. G. Awate 1 Apr  
 B. Galtier 1 May  
 J.E. Lukens 1 Aug  
 Vilas M. Salokhe 1 Sept  
 T. Skjesol 17 Aug  
 Yordphol Tanaboriboon 16 Nov

#### Less Than One Year

F. Becker 13 Feb  
 G.E. de Bruijn 19 Oct  
 P.D. Chudleigh 28 Feb  
 T. Gangadharaiiah 5 Jan  
 H. Ihle 24 Sept  
 M. Isobe 1 June  
 Navnit K. Nanda 12 May  
 K.K. Rampal 11 Sept  
 C.V.S. Rao 11 Sept  
 J. Ruland 1 Sept  
 Swami Saran 11 Sept  
 K. Shanker 9 May  
 C.K. Varshney 12 May  
 L.R. Verma 1 July  
 Y.E. Willems 20 Oct  
 P.Y. Yang 9 Sept

FACULTY AND INTERNATIONAL ACADEMIC AND RESEARCH STAFF 1987



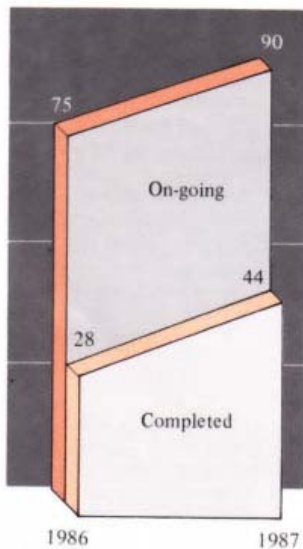
## RESIGNATIONS

N.J.D. Lucas 31 Aug  
 D. Borel 30 Apr  
 S. Chandra 7 Aug  
 F. Christoph 20 Sept  
 H.R. Clarke 31 Dec  
 J.R. Jensen 7 Aug  
 T. Murata 21 Apr  
 K. Hanaki 24 Apr  
 K. Miyamoto 24 Dec  
 I. Towhata 22 Apr  
 Tsan-Wen Wang 17 Aug

## RESEARCH AND PUBLICATIONS

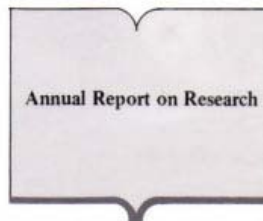
The number of contract and grant research projects completed in 1987 increased to 44 compared with 28 in 1986. Projects started in 1987 and scheduled to continue through to 1988 totalled 90, compared with 75 on-going projects at the end of 1986.

**Contract and Grant Research  
1986, 1987**



To promote project research, the Regional Research and Development Center will enlarge its promotional activities, concentrating on project fund raising and on marketing the research potential of the Institute.

A complete list of completed and on-going contract and grant research projects during 1987 is found in the Appendix.



The Institute has had a continuing tradition of pioneering in scientific and technological research that is applicable to the needs of Asia, and not aimed solely at academic acclaim. The 1987 Annual Report on Research, a portfolio of sponsored and in-house research as well as research carried out by Doctoral students, is reviewed and edited by the Office of the Vice President for Academic Affairs.

**Summary of Publications During 1987**

| Source       | Number of Publications |                              |                     |                        | Total      | Other *   |
|--------------|------------------------|------------------------------|---------------------|------------------------|------------|-----------|
|              | Journal Paper          | Conference Paper/Proceedings | AIT Research Report | Book/Chapter in a Book |            |           |
| AFE          | 26                     | 15                           | 2                   | 5                      | 48         | 3         |
| CS           | 7                      | 14                           |                     |                        | 21         | 1         |
| ET           | 14                     | 15                           |                     |                        | 29         | 7         |
| EE           | 3                      | 17                           |                     |                        | 20         | 3         |
| GTE          | 10                     | 36                           |                     | 3                      | 49         | 6         |
| HSD          | 17                     | 6                            |                     |                        | 23         | 15        |
| IEM          | 19                     | 16                           |                     |                        | 35         | 6         |
| SEC          | 21                     | 31                           |                     | 2                      | 54         | 1         |
| WRE          | 5                      | 11                           | 7                   | 1                      | 24         |           |
| INRDM        |                        | 14                           |                     |                        | 14         | 2         |
| LC           | 5                      | 8                            |                     | 2                      | 15         |           |
| <b>TOTAL</b> | <b>127</b>             | <b>183</b>                   | <b>9</b>            | <b>13</b>              | <b>332</b> | <b>49</b> |

\* Monographs, Working Papers, Reports (including Progress, Interim, Consultancy Reports and others), Reviews, Division Research Reports, Division Research Papers, Newsletters, Reference Materials, Course Handbooks, Lecture Notes.

## CONTINUING EDUCATION

The Institute's continuing education activities comprise training courses, workshops, seminars and conferences. The average duration of such activities is four weeks. During 1987, over 1,000 participants from different countries in the region and elsewhere attended the Institute's continuing education programs.

A complete list of continuing education activities in 1987 is found in the Appendix.



The Institute has drawn-up plans to strengthen the supportive roles of the academic centers in various endeavors.

### Asian Disaster Preparedness Center (ADPC)

A significant expansion of ADPC activities is expected in training, research studies, information dissemination, planning services, technical programs, consultancies, and the promotion of appropriate technology and disaster awareness.

### Continuing Education Center (CEC)

The CEC will organize programs in new fields of contemporary regional interest, such as biotechnology, telecommunications and materials.

### Language Center (LC)

The pre-Master's English language program is expected to further expand on a self-financing basis. Admission is open to Master's students at AIT as well as to students who will pursue their Master's program elsewhere.

### Library and Regional Documentation Center (LRDC)

LRDC's growing involvement in the training of librarians, information scientists and information managers is reflected in plans to increase the number and range of training activities.

## COMPUTING FACILITIES, SERVICES AND ADMINISTRATION OF RESOURCES

An advisory group, established by the President in August 1986 and chaired by the Vice President for Academic Affairs, has proposed the following measures, to improve the Institute's computing facilities and services, as well as the administration of computing resources.

- Placement of all computing services under the administration of the Regional Computer Center (RCC), to ensure optimal use and maintenance of computing resources and better manpower development.

- Appointment of a campus computing committee to advise on general policy on computing, including the acquisition of hardware and software.

- Promotion of the RCC's Program in Computer Applications Development and other outreach activities, to fully utilize the mainframe and generate additional revenue.

- Provision of staff training, to enable qualified staff to achieve a desired level of computing skill and capability.

### Strategic Objectives for RCC

Four strategic objectives have been defined for the Regional Computer Center. The RCC will provide on-campus computer support, advanced technical training, networking and advanced telecommunications facilities, and advanced manufacturing applications.

## DONOR RELATIONS

For FY 1986-87, the Institute received contributions totalling Baht 361,813,000, in cash and in kind. The contributions were presented in the form of grants for scholarships, research projects, continuing education activities, campus development (building), equipment and books, faculty and staff secondments, tax reimbursements, operating costs, local currency funds, and the AIT Endowment Fund.

An encouraging trend during FY 1986-87 was the increasing number of multi-year grants, thus facilitating the Institute's long-term planning of academic ventures.

While most donors maintained their levels of support at existing levels, some increased and expanded the scope of their programs of assistance.

Multi-year support and commitments are being extended by the following donor countries.

Australia, 3 years  
 Belgium, 4 years  
 Canada, 5 years  
 FRG, 3 years  
 Italy, 4 years  
 The Netherlands, 3 years  
 New Zealand, 3 years  
 Norway, 4 years  
 Switzerland, 2 years  
 Thailand, 5 years  
 USA, 5 years

### Total Contributions in Cash and in Kind FY 1986-87

| Types of Grants                | Cash                 | In Kind             | Total                |
|--------------------------------|----------------------|---------------------|----------------------|
| Scholarships                   | 139,924,000          | —                   | 139,924,000          |
| Research Projects              | 55,622,000           | —                   | 55,622,000           |
| Continuing Education           | 26,206,000           | —                   | 26,206,000           |
| Campus Development (Buildings) | 5,500,000            | —                   | 5,500,000            |
| Equipment/Books                | 9,521,000            | 11,419,000          | 20,940,000           |
| Endowment Fund                 | 15,084,000           | —                   | 15,084,000           |
| Faculty/Staff Secondments      | 4,451,000            | 33,433,000          | 37,884,000           |
| Tax Reimbursements             | 33,956,000           | —                   | 33,956,000           |
| Operating Costs                | 26,473,000           | —                   | 26,473,000           |
| Local Currency Funds           | 224,000              | —                   | 224,000              |
|                                | <b>B 316,961,000</b> | <b>B 44,852,000</b> | <b>B 361,813,000</b> |



**Percentage of Donors' Cumulative Contributions  
FY 1959-60 to FY 1986-87**

| Donor  | Percentage   |
|--|--------------|
| <b>Governments</b>                               |              |
| Australia  | 4.88         |
| Austria  | 0.02         |
| Bangladesh                                       | 0.03         |
| Belgium  | 0.92         |
| Canada   | 5.33         |
| RoC  | 3.58         |
| Denmark  | 1.37         |
| France   | 2.76         |
| FRG  | 8.57         |
| India  | 0.23         |
| Indonesia  | 0.17         |
| Iran   | 0.01         |
| Israel   | 0.05         |
| Italy  | 0.26         |
| Japan  | 11.12        |
| RoK  | 0.35         |
| Nepal  | 0.02         |
| Netherlands                                      | 3.21         |
| New Zealand                                      | 0.86         |
| Norway   | 1.79         |
| Pakistan   | 0.13         |
| Philippines                                      | 0.23         |
| Sri Lanka  | 0.02         |
| Sweden   | 0.04         |
| Switzerland                                      | 0.78         |
| Thailand   | 12.18        |
| UK   | 4.22         |
| USA  | 13.36        |
| Vietnam  | 0.01         |
| <b>International Organizations</b>               | <b>3.77</b>  |
| <b>National Government Agencies</b>              | <b>5.63</b>  |
| <b>Business, Foundations, Private and Others</b> | <b>14.10</b> |
| <b>Total</b>                                     | <b>100.0</b> |

**Total Contributions in  
Cash and Kind  
FY 1959-60 to FY 1986-87**

Cumulative contributions received by the Institute, in cash and in kind, from FY 1959-60 to FY 1986-87 totalled approximately US\$148,237,000.

At its establishment in 1959, the Institute's founding countries provided US\$271,719. When the Institute was chartered as an independent regional institute in 1967, the annual contribution provided by donors increased to US\$828,662. The annual total further increased to US\$7,008,000 when the Institute marked its 20th year in 1979. During the last fiscal year, the annual contribution rose to US\$14,129,000.

**OUTLOOK  
FOR THE FUTURE**

The increasing number of donors now providing multi-year support has been a most encouraging development, particularly in view of the financial commitments required to support the Institute's long-term planning of new academic ventures. Until very recently, the majority of donors provided assistance to the Institute on a yearly basis. The new pattern of multi-year support and commitment augurs well for the operation and future stability of the Institute, as it approaches its 30th anniversary in 1989.

The Institute seeks to strengthen various funding mechanisms available to it. Among these is the Endowment Fund, which could prove to be a viable alternative in providing resources to operate the Institute in the long-term, and in alleviating the burdens of the donors for direct annual support.

## Details of Donors' Support FY 1986-87

### GOVERNMENTS

**Australia** contributed Baht 64,000 for continuing education activities. A grant for A\$ 2,023,000, remitted on 11 August 1987, will be officially recorded in FY 1987-88.

**Belgium** contributed a total cash grant of Baht 4,987,000 for scholarships (Baht 4,322,000) and research projects (Baht 665,000). In addition, 78 man/months of faculty/staff secondments were provided. A new Memorandum of Understanding, covering another four-year period, is expected in early 1988.

**Canada** through CIDA contributed a total cash grant of Baht 12,947,000 for scholarships (Baht 7,557,000), research projects (Baht 2,008,000), continuing education activities (Baht 1,124,000), and faculty and staff support (Baht 2,258,000) for direct hire positions. A new Memorandum of Understanding, covering another five-year period, is expected in early 1988.

**The Republic of China** contributed Baht 11,459,000 for scholarships and 24 man/months of faculty secondments.

**Denmark** contributed Baht 4,676,000 for scholarships and provided 35.5 man/months of faculty support.

**France** made a total cash contribution of Baht 17,577,000 for scholarships (Baht 8,059,000), research projects (Baht 7,548,000), continuing education activities (Baht 1,229,000), and equipment (Baht 741,000); as well as equipment worth Baht 366,000 and 128 man/months of faculty/staff secondments.

**The Federal Republic of Germany** through DAAD, GTZ and CDG, provided a total cash grant of Baht 32,131,000 for scholarships (Baht 27,685,000), research projects (Baht 4,321,000), and continuing education activities (Baht 125,000). In addition, equipment worth Baht 123,000 and 98 man/months of faculty/staff secondments were provided. The Federal Republic of Germany and AIT have agreed to extend the cooperation program for another three years. The Memorandum of Understanding will be signed in early 1988.

**India** provided a local currency grant of Baht 132,000 and 24 man/months of short term faculty secondments.

**Italy** contributed a cash grant of Baht 2,186,000 for scholarships, as well as 12 man/months of faculty support. The current Italy/UNDP/AIT Project covers the period 1985-89.

**Japan** made a total contribution of Baht 29,180,000 for scholarships (Baht 17,803,000), equipment (Baht 8,778,000), and operational costs (Baht 2,599,000). In addition, equipment worth Baht 1,983,000 and 106.5 man/months of faculty and staff secondments were provided.

Through JICA a grant of Baht 1,614,000 was made for scholarships (Baht 138,000) and continuing education activities (Baht 1,476,000).

A special grant of Baht 12,980,000 was presented to establish the Japan-AIT Human Resources Development Fund at the Institute.



HRH Princess Maha Chakri Sirindhorn viewing the Madiran Microvips image processor donated by the French Government to the remote sensing laboratory.

H.E. Mr. John Paynter, the Canadian Ambassador to Thailand, presenting a CIDA grant for the Institute's Broad-Based Development Program.

H.E. Dr. Helmut Rueckriegel, the Ambassador of the Federal Republic of Germany to Thailand, presenting Miss J. Tolentino, an AFE student, with her scholarship grant.



H.E. Mr. B. Brown, the New Zealand Ambassador to Thailand, presenting his Government's support to AIT.

H.E. Mr. William Brown (left), the American Ambassador to Thailand, presiding over the signing of the ASEAN/AIT Scholarship Project, Phase II.

H.E. Mr. A. Kamer, the Swiss Ambassador to Thailand, signing the Swiss scholarship grant agreement.

Dr. Pote Sapianchai, Secretary General of the National Education Council, handing over a cheque from the Royal Thai Government providing wide-ranging support to the Institute.

**The Netherlands** contributed a total cash grant of Baht 10,227,000 for scholarships (Baht 8,304,000), research projects (Baht 474,000), continuing education activities (Baht 786,000) and the Asian faculty support program (Baht 663,000). Equipment and books worth Baht 3,396,000 were also provided.

To support the AIT/ISS project, the Netherlands also contributed Baht 1,681,000 for research projects and 35 man/months of faculty secondments.

**New Zealand** remitted a cash grant of Baht 1,729,000 to the Institute on 30 October 1987. This contribution will be officially reported in FY 1987-88. The current triennial grant covers the period 1985-88.

**Norway** made a total cash grant of Baht 6,023,000 for scholarships (Baht 5,729,000), research projects (Baht 489,000), and continuing education activities (Baht 764,000). In addition, through a special project to support the Division of Computer Science, Norway provided Baht 2,056,000 worth of equipment, as well as 33.5 man/months of faculty/staff secondments.

**Pakistan** contributed Baht 962,000 to the AIT Endowment Fund.

**The Republic of the Philippines** provided a total cash grant of Baht 489,000 for the AIT Endowment Fund (Baht 142,000) and operational costs (Baht 347,000).

**Sri Lanka** provided a total cash grant of Baht 300,000 for local currency fund (Baht 92,000) and continuing education activities (Baht 208,000).

**Sweden** through SAREC provided Baht 99,000 to support the scholarship program.

**Switzerland** contributed Baht 4,021,000 for scholarships. In addition, 24 man/months of faculty secondments were provided.

**Thailand** provided a total grant of Baht 49,617,000 for King's scholarships (Baht 6,161,000), construction fund (Baht 5,500,000), operational costs (Baht 4,000,000) and tax and duties reimbursement (Baht 33,956,000).

**The United Kingdom** through ODA and the British Council contributed a total cash grant of Baht 4,338,000 for scholarships (Baht 3,063,000) and research projects (Baht 1,275,000). In addition, 65 man/months of faculty secondments were provided.

**The United States of America**, through the US-ASEAN scholarship program, the US-ASEAN Energy III project, and USAID third country programs, provided a total cash grant of Baht 27,489,000 for scholarships (Baht 8,662,000), research projects (Baht 1,793,000), continuing education activities (Baht 6,305,000), and operating costs (Baht 10,729,000). In addition, 11 man/months of faculty secondments were provided.



## INTERNATIONAL ORGANIZATIONS

- Thirteen international organizations contributed a total cash grant of Baht 16,534,155 for scholarships (Baht 4,337,000), research projects (Baht 3,989,155), continuing education activities (Baht 7,798,000), and faculty and staff support (Baht 410,000). These organizations included the ADB, COSTED, ESCAP, ILO, WHO, UNDP, FAO, UNESCO, UN-HABITAT, UNIDO, UNEP, UNHCR, and the International Bank for Reconstruction and Development (the World Bank).
- The Commission of the European Communities contributed a total grant of Baht 14,800,000 for scholarships (Baht 2,050,000) and research projects (Baht 12,750,000). In addition, it provided 26 man/months of faculty secondments.
- UNDP/FAO provided 34 man/months of faculty secondments.
- The AIT-UK Appeal provided a grant of Baht 917,000 contributed by Shell International Petroleum Co. Ltd. to support one faculty member in the Division of Energy Technology.
- The Education and Public Welfare Foundation contributed Baht 1,000,000 to the Endowment Fund.
- IDRC of Canada made a total contribution of Baht 5,796,000 for research projects (Baht 3,184,000) and continuing education activities (Baht 2,612,000).
- Keidanren of Japan contributed Baht 2,795,000 for scholarships.
- The Lee Foundation of Singapore presented Baht 898,000 for scholarships.
- Winrock International presented Baht 407,000 for scholarships.

## FOUNDATIONS

- The AIT Foundation Inc. made cash grants totalling Baht 9,727,160 through the following gifts to AITF:
  - Baht 464,580 from Starr Foundation for one scholarship
  - Baht 464,580 from AIT Foundation Inc. for one scholarship
  - Baht 8,798,000 from IBM Americas/Far East Corp.



"Technovision", a CAD/CAM system, was presented on behalf of Norsk Data and the Norwegian Government by H.E. Mr. K. Mosbakk, the Norwegian Minister of Trade.

## BUSINESS AND INDUSTRIES

- Twenty business enterprises from Malaysia, the Republic of China, Japan, the Netherlands, Norway, the United Kingdom, the Federal Republic of Germany, Indonesia, Australia, and Thailand provided cash contributions of Baht 10,914,000 for scholarships (Baht 6,234,000), sponsored research projects (Baht 3,790,000) and continuing education activities (Baht 888,000).
- IBM Americas/Far East Corp. provided 27 man/months of staff secondments in the Regional Computer Center.
- Shell International Petroleum Co. Ltd. contributed Baht 1,901,000 for scholarships and two man/months of faculty secondments.

## PRIVATE AND OTHERS

- The AIT Alumni Association contributed Baht 191,000 to the scholarship program.
- Mrs. Dorothy Marden of Hong Kong provided a grant of Baht 471,000 for one scholarship.
- Mr. Tim Ho of Hong Kong also provided a grant of Baht 438,000 to the scholarship program.



Mr. M.A. Van den Bergh, Chairman of Shell Company of Thailand Ltd., presented a scholarship grant to Mr. Bermant Pacia, a student in the ET Division.



Summary of Donations Received(Cash and Kind)FY 1986-87(%)

| GOVERNMENTS                        |        | FOUNDATIONS, BUSINESS, PRIVATE AND OTHERS       |       | NATIONAL GOVERNMENT AGENCIES                                    |  |       |
|------------------------------------|--------|---|-------|---|--|-------|
| Australia                          | 0.64   | <b>FOUNDATIONS</b>                              |       | <b>PRIVATE AND OTHERS</b>                                       | <b>Federal Republic of Germany</b>             |       |
| Belgium                            | 1.96   | AIT Foundation                                  | 0.26  | AIT Alumni Association  | Karlsruhe University                           | 0.02  |
| Canada                             | 3.58   | AIT Foundation (IBM)                            | 3.74  | Mrs. Dorothy Marden, Hong Kong                                  | <b>Indonesia</b>                               |       |
| RoC                                | 3.55   | AIT-UK Appeal Fund                              | 0.25  | Petra Christian University, Indonesia                           | HKI  | 0.02  |
| Denmark                            | 1.84   | Education and Public Welfare Foundation         | 0.28  | Illinois Institute of Technology, USA                           | National Institute of Aeronautics and Space    | 0.04  |
| France                             | 6.07   | IDRC  | 1.60  | Foster Parents Plan International, USA                          | University of Sumatra                          | 0.04  |
| FRG                                | 10.14  | Keidanren                                       | 0.77  | Mr. Tim Ho, Hong Kong   | <b>Japan</b>                                   |       |
| India                              | 0.35   | Lee Foundation                                  | 0.25  |   | OECF   | 0.74  |
| Italy                              | 0.77   | Winrock International                           | 0.11  |   | <b>The Netherlands</b>                         |       |
| Japan                              | 13.88  |   | 7.26% |   | Institute of Agricultural Engineering          | 0.04  |
| RoK                                | 0.17   |   |       |   | <b>Thailand</b>                                |       |
| Netherlands                        | 4.71   | <b>BUSINESS</b>                                 |       |   | BMA  | 1.09  |
| Norway                             | 2.83   | A.R. Group Consultants Co. Ltd., Thailand       | 0.14  | Rural Investments Overseas Ltd., Thailand                       | Chiang Mai University                          | 0.02  |
| Pakistan                           | 0.27   | Botton Hennessey Sendirian Bhd., Malaysia       | 0.01  | Retser Engineering Agency, RoC                                  | Department of Mineral Resources                | 0.72  |
| Philippines                        | 0.13   | Consultants of Technology Co. Ltd., Thailand    | 0.04  | Seatec International, USA                                       | EGAT   | 0.46  |
| Sri Lanka                          | 0.08   | China Technical Consultants Inc., RoC           | 0.14  | Siam Cement Co. Ltd., Thailand                                  | Kasetsart University                           | 0.01  |
| Sweden                             | 0.03   | Chinese Petroleum Corp., RoC                    | 0.14  | Smith International Co., Thailand                               | KMIT   | 0.01  |
| Switzerland                        | 1.39   | Kawasaki Steel Corp., Japan                     | 0.02  | Shell International Petroleum Co. Ltd., Thailand                | NESDB  | 0.32  |
| Thailand                           | 13.71  | Nippon Kokan Ltd., Japan                        | 0.02  | Team Consulting Engineers, Co. Ltd., Thailand                   | National Inland Fisheries Institute            | 0.02  |
| UK                                 | 1.90   | Netherlands Engineering Consultants Co.         | 0.07  | Taisei Corp., Japan   | National Institute of Agricultural Engineering | 0.29  |
| USA                                | 7.81   | Norconsult International, Norway                | 0.07  | Taiwan Power Co., RoC   | Ministry of Public Health                      | 0.14  |
|                                    | 75.81% | Northwest Hydro Consultants Ltd., Canada        | 0.21  | Water and Energy Research Project Development, Nepal            | Thammasat University                           | 0.01  |
| <b>INTERNATIONAL ORGANIZATIONS</b> |        | Pacific International Consultants Co., Thailand | 0.03  | Association for the Development of Earthquake Prediction, Japan | Thai-Australia Land Reform Development Project | 0.05  |
| ADB                                | 0.40   |   |       |   | Thai-German Plant Protection Project           | 0.11  |
| COSTED                             | 0.01   |   |       |   | <b>USA</b>                                     |       |
| EC                                 | 4.38   |   |       |   | Academy for Educational Development            | 0.10  |
| ESCAP                              | 0.21   |   |       |   |  |       |
| ELO                                | 0.12   |   |       |   |  |       |
| WHO                                | 0.02   |   |       |   |  |       |
| UNDP                               | 2.76   |   |       |   |  |       |
| UNESCO                             | 0.57   |   |       |   |  |       |
| UNCHS                              | 0.13   |   |       |   |  |       |
| UNIDO                              | 0.11   |   |       |   |  |       |
| UNEP                               | 0.02   |   |       |   |  |       |
| UNITED NATIONS UNIVERSITY          | 0.07   |   |       |   |  |       |
| WORLD BANK                         | 0.47   |   |       |   |  |       |
|                                    | 9.27%  |   |       | 2.83%   |  | 4.25% |

## CENTRAL ADMINISTRATION

1987 was a prosperous financial year for the Institute during which steady progress in services provided and in financial control was made in all departments and units of the central administration. Some of the more important and interesting developments are highlighted in this report.



### NEW CAMPUS DEVELOPMENT POLICY

AIT adopted in 1987 a policy of full utilization of the campus land area. This manifested itself in the transformation of the campus' west end from a brush and bush wasteland to an area greened with agricultural development and populated with research projects. The purchase of two water holes and the finalization of plans to put up a residential complex on the small part of the AIT campus east of the Paholyothin highway were also undertaken.

Congruent with the new land development policy was an upgrading, in conjunction primarily with the visit of His Majesty the King of Thailand, of the developed part of the AIT campus. Significant beautification and improvement of roads, walkways, the AIT Center, and recreational facilities were carried out, bringing AIT to a remarkably well maintained state.

### NEW SERVICES AT AIT CENTER AND ARCADE

In terms of new services introduced and the extension of existing services at the AIT Center and the arcade, 1987 was a year almost sure to please everyone at the Institute. Major improvements at the AIT Center included the upgrading of guest rooms, the introduction of a 24-hour front desk operation, and the provision of competent night and weekend telephone exchange service. Facsimile service, which is particularly useful for businessmen and academics communicating in foreign languages, was added to the telex service at the center. Concessions were awarded for the operation of a new bakery shop and the Institute's reorganized bookstore. The extended hours of switchboard operation, the improved variety of cuisine in the student cafeteria, and the addition of the floating restaurant at the campus' west end further enhanced the Institute's convivial atmosphere.

### Personnel

The following personnel actions were taken in 1987.

|                       | Local | Direct Hire | Total |
|-----------------------|-------|-------------|-------|
| Appointment           | 154   | 70          | 224   |
| Extension of Contract | 188   | 44          | 232   |
| Promotion             | 4     | 8           | 12    |
| Transfer              | 20    | —           | 20    |
| Resignation           | 72    | 23          | 95    |



## ENERGY CONSERVATION

AIT launched two unprecedented major energy conservation investments. The first, a two-phase project, started with the redesigning of the Institute's entire electrical grid for energy conservation. The second phase will provide energy reliability and electricity to the campus west end in 1988.

The second major energy conservation investment, the placement of motorized valves, thermostats and timers in all airconditioning fan-coils, is expected to further lead to significant utility savings. Air-conditioning costs account for a substantial share of AIT's large utility bill.

## REORGANIZATION

The cafeteria was transferred from the control of a committee under the Bursar to the Housing Section of the Physical Plant, along with control responsibilities for the west end floating restaurant and the breakfast services provided by the Student Union on weekends and holidays.

The Drafting Unit was transferred from the Office of Media and Information Services to the Physical Plant.

## COMMUNITY SERVICE

### Loan of Photo and Painting Exhibit

AIT's photo and painting exhibition honoring the work of His Majesty the King of Thailand was displayed in various institutions in Thailand, as well as in the Federal Republic of Germany.

The photos exhibited were taken by Kraipit Phanvut and General Pichitr Kullavanjaya.

The paintings exhibited consisted of prize winning entries to the painting exhibition, "His Majesty the King of Thailand and Rural Development", which was sponsored by AIT.

First prize winners of the painting contest: top painting by Mr. Nirandorn Chaengtrakul (youth category); middle, by Mr. Nirand Kraisoraratana (adult category); below, by Ms. Pojana Poovana-kijjakorn (children's category).



## MEDICAL EQUIPMENT DONATION

AIT donated a state-of-the-art X-ray machine as well as other medical equipment to the new Thammasat Hospital, located right across from AIT's main gate. This

donation will be formalized in a Memorandum of Understanding which will delineate the mutual cooperation between these two institutions of higher learning.



## ALUMNI RELATIONS

### 17th AITAA Governing Board Meeting

The 17th AITAA Governing Board Meeting, held in Manila from January 29-30, 1988, expressed full support to the Institute's outreach program, with a view to fostering "partnership in development" between the Institute and various countries in the region.

Fund-raising efforts for the Institute will remain as one of AITAA's most important activities. Particular attention will be given to identifying potential donors to the Institute.

Increased efforts will also be given to other AITAA activities, such as the following:

**Technology Transfer**, through the application of AIT researches in rural development.

**Continuing Education**, through the organization of technical seminars in various countries by local AITAA chapters.

**Strengthening of AITAA**, through annual Governing Board Meetings and local chapter meetings, as well as other events that would foster unity.



Dr. Worsak, an Associate Professor in the Division of Structural Engineering and Construction, is shown receiving his award from the Thai Prime Minister.

### TOP HONORS FOR FIVE THAI ALUMNI

Five Thai alumni were among those honored at the 1987 National Research Council Awards held in July 1987. H.E. General Prem Tinasulanonda, the Thai Prime Minister, presided over the ceremony.

The five recipients and their respective citations are as follows:

**Dr. Anat Arbhahirama** (WRE '62), who was named Outstanding Individual Researcher in Engineering and Industrial Research.

**Dr. Worsak Kanok-Nukulchai** (SEC '73) and his former students, **Mr. Somporn Attasaneewong** (SEC'84) and **Mr. Sarun Udomregchai** (SEC'83), who were honored with the Engineering and Industrial Research Award for their outstanding structural engineering software, *Microfeap II*.

**Dr. Yuen Poovarawan** (IEM '76), who with his research team from the Kasetsart University won the Science and Mathematics Award for their project on the computerization of Thai typesetting.

### FIRST AITAA SCHOLAR

At its 16th Governing Board Meeting in January 1987, AITAA presented its first scholarship grant to the Institute. The grant's recipient is Mr. Santi Charuskumchonrkul, a Thai student in the Division of Water Resources Engineering. Mr. Santi is photographed consulting with his adviser, Prof. Suphat Vongvissemsojai, concerning his thesis, "Oceanographical Circulation in the Upper Gulf of Thailand."



To honor its commitment to provide a matching scholarship for every scholarship donated by AITAA, the AIT Foundation Inc. presented one scholarship grant to the Institute. This was assigned to Mr. Jose Victor N. Saqueton, a Filipino student in the Division of Energy Technology. Both expect to graduate in August 1988.



The AIT Alumni Association (AITAA) was established in 1969 to develop mutual interest among the AIT alumni, to strengthen mutually beneficial relations between the Institute and its alumni, and promote the interest of the Institute. Current chapter presidents are as follows:

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## AIT ALUMNI ASSOCIATION

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**Bangladesh**

Dr. Hamidur Rahman Khan  
WRE '65

**Brunei**

Mr. Yong Foh Fui  
EE '75

**China, Republic of**

Mr. Tseng Yen-Yi  
CO '73

**Hong Kong/Macao**

Mr. Alexander Choy Cheung Kin  
EE '86

**India**

Dr. Ashok Kumar Gupta  
CO '71

**Indonesia**

Dr. Dradjat Hoedajanto  
SEC '74

**Japan**

Mr. Yoshiaki Takahashi  
HSD '79

**Korea, Republic of**

Dr. Son Seung-Yo  
SEC '70

**Malaysia**

Mr. Mah Lok Abdullah  
IEM '84

**Nepal**

Mr. Surendra Man Shrestha  
CS '80

**Pakistan**

Mr. Iqtidar A. Chaudhri  
WRE '64

**Philippines**

Mr. Ildefonso R. Santos  
HSD '82

**Singapore**

Mr. Ho Siew-Koon  
WRE '71

**Sri Lanka**

Mr. Alujjage Don Sugatadasa  
HSD '82

**Thailand**

Mr. Roongrueng Chulajata  
WRE '62

**USA**

Mr. Gregorio I. Patron  
WRE '66

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### THAI ALUMNI TOAST THEIR ALMA MATER

To celebrate the Institute's receipt of a Science and Technology Award from USAID in June 1987, members of the Thai Chapter of AITAA hosted a congratulatory party in Bangkok in August.

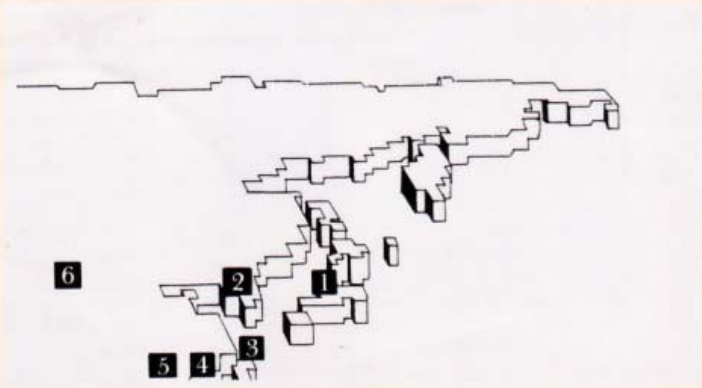
AIT joined eight other institutions and organizations in receiving the prestigious award, which was made in recognition of their significant contributions to science and technology over the past 25 years. The award was jointly presented by USAID and the National Research Council, USA.



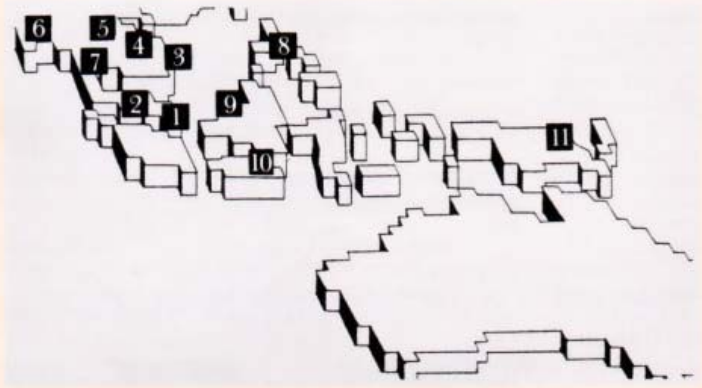
The party also honored Dr. Chaovana Sylvanta, Privy Councillor to His Majesty the King of Thailand, who was presented an Honorary Membership of the AIT Alumni Association.

Two of the party hosts, Thai alumni Dr. Anat Arbhabharama (WRE'62) and Dr. Subin Pinkayan (WRE'61), third from right and extreme right, respectively, are photographed with, from left, AIT President North, US Ambassador H.E. Mr. William Brown, and Dr. Chaovana na Sylvanta.

ALUMNI DISTRIBUTION

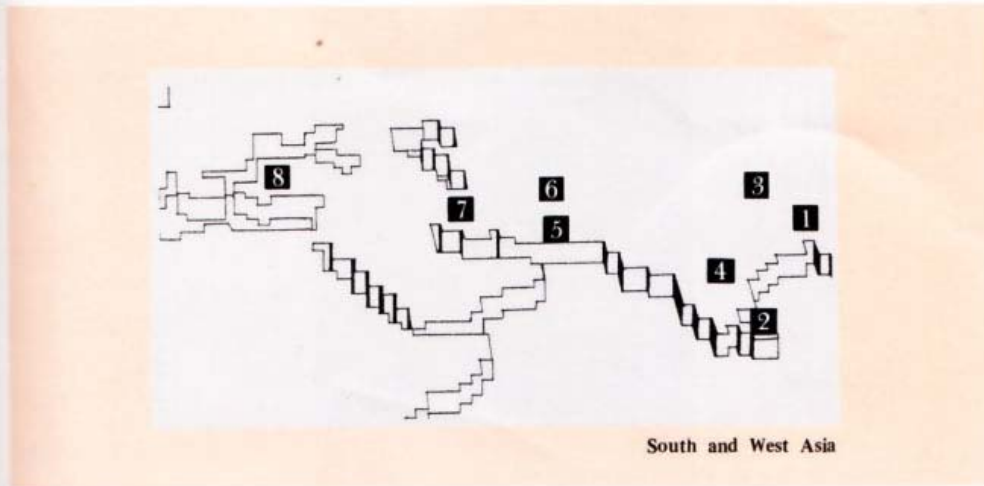


East Asia



South East Asia and the Pacific

BY COUNTRY 1961-1987



South and West Asia

**East Asia**

|   |           |     |
|---|-----------|-----|
| 1 | Japan     | 33  |
| 2 | RoK       | 67  |
| 3 | RoC       | 546 |
| 4 | Hong Kong | 68  |
| 5 | Macau     | 5   |
| 6 | PRC       | 30  |

**South East Asia and the Pacific**

|    |                  |       |
|----|------------------|-------|
| 1  | Singapore        | 27    |
| 2  | Malaysia         | 199   |
| 3  | Vietnam          | 70    |
| 4  | Kampuchea        | 3     |
| 5  | Laos             | 1     |
| 6  | Burma            | 27    |
| 7  | Thailand         | 1,093 |
| 8  | Philippines      | 436   |
| 9  | Brunei           | 6     |
| 10 | Indonesia        | 189   |
| 11 | Papua New Guinea | 5     |

**South and West Asia**

|   |             |     |
|---|-------------|-----|
| 1 | Bangladesh  | 340 |
| 2 | Sri Lanka   | 313 |
| 3 | Nepal       | 130 |
| 4 | India       | 271 |
| 5 | Pakistan    | 294 |
| 6 | Afghanistan | 18  |
| 7 | Iran        | 11  |
| 8 | Turkey      | 6   |

Not Shown:

|          |   |          |   |
|----------|---|----------|---|
| Canada   | 2 | Malawi   | 1 |
| Ethiopia | 1 | Tanzania | 5 |
| Ghana    | 2 | UK       | 2 |
| Honduras | 1 | USA      | 4 |

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**Total** **4,206**

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## APPENDICES

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**ASIAN INSTITUTE OF TECHNOLOGY BALANCE SHEET AS AT 30 JUNE 1987**  
(BAHT)

|   | Unrestricted Current Fund |            | Restricted Fund |             | Capital Fund |             | Sponsored Program Fund |            | Agency Fund |            | Total         |               |
|---|---------------------------|------------|-----------------|-------------|--------------|-------------|------------------------|------------|-------------|------------|---------------|---------------|
|   | 1987                      | 1986       | 1987            | 1986        | 1987         | 1986        | 1987                   | 1986       | 1987        | 1986       | 1987          | 1986          |
| <b>ASSETS</b>                             |                           |            |                 |             |              |             |                        |            |             |            |               |               |
| Cash at banks                             | 6,514,219                 | 1,857,160  | 11,120,354      | 3,346,252   | 8,994,013    | 11,514,018  | 10,963,373             | 4,750,624  | 5,788,653   | 2,157,032  | 43,380,612    | 23,625,086    |
| Investment, at cost<br>(Note 2)           | 4,422,896                 | 9,790,412  | 208,821,529     | 183,913,779 | 19,071,440   | 19,673,178  | 10,436,861             | 5,654,133  | 27,160,088  | 30,989,258 | 269,912,814   | 250,020,760   |
| Advance duties and taxes<br>(Note 3)      | 25,002,761                | 37,210,516 | -               | -           | -            | -           | -                      | -          | -           | -          | 25,002,761    | 37,210,516    |
| Accounts receivable and<br>accrued income | 1,756,595                 | 1,419,065  | 4,552,150       | 4,946,543   | 570,394      | 49,850      | 1,073,008              | 1,144,681  | 714,658     | 105,978    | 8,666,805     | 7,666,117     |
| Deposits                                  | 265,792                   | 249,093    | 1,192,959       | 1,499,579   | 144,298      | 144,298     | -                      | -          | -           | -          | 1,603,049     | 1,892,970     |
| Inventories                               | -                         | -          | 1,039,906       | 1,772,707   | -            | -           | -                      | -          | -           | -          | 1,039,906     | 1,772,707     |
| Due from other funds                      | 27,097,228                | 276,304    | 9,840,275       | 180,000     | 4,500,000    | 1,035,492   | -                      | 540,000    | -           | -          | 41,437,503    | 2,031,796     |
| Campus development                        | -                         | -          | -               | -           | 15,191,939   | 14,217,038  | -                      | -          | -           | -          | 15,191,939    | 14,217,038    |
| Buildings                                 | -                         | -          | -               | -           | 422,321,420  | 424,461,685 | -                      | -          | -           | -          | 422,321,420   | 424,461,685   |
| Furniture and equipment                   | -                         | -          | -               | -           | 443,524,457  | 404,813,789 | -                      | -          | -           | -          | 443,524,457   | 404,813,789   |
| Library acquisitions                      | -                         | -          | -               | -           | 46,442,165   | 42,324,313  | -                      | -          | -           | -          | 46,442,165    | 42,324,313    |
| Construction in progress                  | -                         | -          | -               | -           | 7,911,820    | 2,651,795   | -                      | -          | -           | -          | 7,911,820     | 2,651,795     |
|   | 65,059,491                | 50,802,550 | 236,567,173     | 195,658,860 | 968,671,946  | 920,885,456 | 22,473,242             | 12,089,438 | 33,663,399  | 33,252,268 | 1,326,435,251 | 1,212,688,572 |
| <b>LIABILITIES AND FUND BALANCES</b>      |                           |            |                 |             |              |             |                        |            |             |            |               |               |
| Accounts payable and<br>accrued expenses  | 405,196                   | 2,617,341  | 2,486,968       | 5,359,031   | -            | 125,662     | 750,411                | 69,511     | 9,239       | 32,778     | 3,651,814     | 8,204,323     |
| Deposits                                  | 377,700                   | 386,100    | 76,940          | 48,317      | -            | -           | -                      | -          | -           | -          | 454,640       | 434,417       |
| Due to other funds                        | 14,340,275                | -          | -               | 1,276,304   | -            | 35,492      | -                      | -          | 27,097,228  | 720,000    | 41,437,503    | 2,031,796     |
| Fund balances (Note 4)                    | 49,936,320                | 47,799,109 | 234,003,265     | 188,975,208 | 968,671,946  | 920,724,302 | 21,722,831             | 12,019,927 | 6,556,932   | 32,499,490 | 1,280,891,294 | 1,202,018,036 |
|   | 65,059,491                | 50,802,550 | 236,567,173     | 195,658,860 | 968,671,946  | 920,885,456 | 22,473,242             | 12,089,438 | 33,663,399  | 33,252,268 | 1,326,435,251 | 1,212,688,572 |

ASIAN INSTITUTE OF TECHNOLOGY

STATEMENT OF CHANGES IN FUND BALANCES FOR THE YEAR ENDED 30 JUNE 1987 (WITH COMPARATIVE TOTALS FOR 1986)  
(BAHT)

|  | Unrestricted |             |            | Restricted Fund |              |                           | Capital Fund            |                                    |             | Sponsored Program Fund |               | Total 1987    | Total 1986 |
|--|--------------|-------------|------------|-----------------|--------------|---------------------------|-------------------------|------------------------------------|-------------|------------------------|---------------|---------------|------------|
|  | Current Fund | General     | Endowment  | General Reserve | Fixed Assets | Liquid Assets Unallocated | Liquid Assets Allocated | Maintenance & Construction Reserve | Agency Fund | Program Fund           |               |               |            |
| Balances, 1 July 1986 (Note 4)         | 47,799,109   | 46,362,879  | 33,346,927 | 109,265,402     | 888,468,620  | 7,628,696                 | 18,340,688              | 6,286,298                          | 32,499,490  | 1,202,018,036          | 1,096,366,579 |               |            |
| Adjustments:                           |              |             |            |                 |              |                           |                         |                                    |             |                        |               |               |            |
| Project closure transfer               | -            | -           | -          | -               | -            | -                         | (111,413)               | -                                  | -           | -                      | (111,413)     | (332,683)     |            |
| Disposal of assets                     | -            | -           | -          | -               | (3,221,283)  | -                         | -                       | -                                  | -           | -                      | (3,221,283)   | (837,649)     |            |
| Currency fluctuation                   | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | 9,676         |            |
| Additions:                             |              |             |            |                 |              |                           |                         |                                    |             |                        |               |               |            |
| Excess of revenues over expenditures   | 2,137,211    | 19,988,859  | -          | -               | -            | -                         | -                       | -                                  | -           | 9,702,904              | 5,886,416     | 28,397,699    |            |
| Investment income                      | -            | -           | 624,714    | 8,016,685       | -            | -                         | -                       | -                                  | -           | (25,942,558)           | 8,641,399     | 12,392,805    |            |
| Government grants and appropriations   | -            | -           | 15,084,563 | -               | -            | -                         | 15,113,728              | -                                  | -           | -                      | 30,198,291    | 15,609,380    |            |
| Gain (loss) on rate of exchange        | -            | -           | (245,000)  | 1,100,956       | -            | -                         | -                       | -                                  | -           | -                      | 855,956       | 1,534,076     |            |
| Miscellaneous income and contributions | -            | -           | -          | -               | -            | 1,200,063                 | 25,245,368              | -                                  | -           | -                      | 26,445,431    | 4,459,090     |            |
| Contributions - in kind                | -            | -           | -          | -               | -            | -                         | 11,476,310              | -                                  | -           | -                      | 11,476,310    | 44,419,063    |            |
|  | 49,936,320   | 66,351,738  | 48,811,204 | 118,383,043     | 885,247,337  | 8,828,759                 | 70,064,681              | 6,286,298                          | 6,556,932   | 21,722,831             | 1,282,189,143 | 1,202,018,036 |            |
| Deductions:                            |              |             |            |                 |              |                           |                         |                                    |             |                        |               |               |            |
| Inter-fund transfers from (to)         |              |             |            |                 |              |                           |                         |                                    |             |                        |               |               |            |
| - Unrestricted Current Fund            | -            | -           | -          | 6,500,000       | -            | -                         | -                       | 4,500,000                          | -           | -                      | 11,000,000    | 19,066,428    |            |
| - Restricted Fund                      | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | 971,402       |            |
| - General                              | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | (2,794,328)   |            |
| - General Reserve                      | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | (7,995,908)   |            |
| - Liquid Assets Capital Fund           | -            | -           | -          | -               | -            | -                         | 4,266,580               | -                                  | -           | -                      | 4,266,580     | (7,895,621)   |            |
| - Unallocated                          | -            | -           | -          | -               | -            | (5,264,345)               | -                       | (5,056,000)                        | -           | -                      | (10,320,345)  | (7,895,621)   |            |
| - Allocated                            | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | (1,360,492)   |            |
| - Maintenance and Construction Reserve | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | 8,519         |            |
| - Agency Fund                          | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | (6,042,720)   |            |
| Equipment purchase                     | -            | (6,042,720) | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | (6,042,720)   | -             |            |
| Expenditures for plant facilities      | -            | -           | -          | -               | 50,144,464   | -                         | (26,566,848)            | -                                  | -           | -                      | 23,577,616    | -             |            |
| - Cash                                 | -            | -           | -          | -               | -            | -                         | (11,476,310)            | -                                  | -           | -                      | (11,476,310)  | -             |            |
| - Kind                                 | -            | -           | -          | -               | -            | (1,066,119)               | (11,236,551)            | -                                  | -           | -                      | (12,302,670)  | -             |            |
| Other costs                            | -            | -           | -          | -               | -            | -                         | -                       | -                                  | -           | -                      | -             | -             |            |
|  | -            | (6,042,720) | -          | 6,500,000       | 50,144,464   | (6,330,464)               | (45,013,129)            | (556,000)                          | -           | -                      | (1,297,849)   | -             |            |
| Balances, 30 June 1987 (Note 4)        | 49,936,320   | 60,309,018  | 48,811,204 | 124,883,043     | 935,391,801  | 2,498,295                 | 25,051,552              | 5,730,298                          | 6,556,932   | 21,722,831             | 1,280,891,294 | 1,202,018,036 |            |

ASIAN INSTITUTE OF TECHNOLOGY

STATEMENT OF REVENUES AND EXPENDITURES - UNRESTRICTED CURRENT FUND AND RESTRICTED FUND  
FOR THE YEAR ENDED 30 JUNE 1987  
(BAHT)

|   | Total              |                    | Unrestricted       |                    | Restricted         |                   | Kind              |                   |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|
|   | 1987               | 1986               | 1987               | 1986               | 1987               | 1986              |                   |                   |
| <b>REVENUES:</b>                            |                    |                    |                    |                    |                    |                   |                   |                   |
| Tuition and fees                            | 128,569,238        | 118,476,329        | 128,569,238        | 118,476,329        | -                  | -                 | -                 | -                 |
| Cash, gifts and contributions               | 14,921,856         | 22,397,859         | 6,945,836          | 7,119,632          | 7,976,020          | 15,278,227        | -                 | -                 |
| Contributions - in kind                     | 56,668,891         | 56,758,766         | -                  | -                  | -                  | -                 | 56,668,891        | 56,758,766        |
| Sales and services                          | 74,149,469         | 52,714,896         | 657,967            | 747,239            | 73,491,502         | 51,967,657        | -                 | -                 |
| Contract and grant research                 | 16,289,822         | 12,143,753         | 8,685,856          | 6,060,958          | 7,603,966          | 6,082,795         | -                 | -                 |
| Sponsored programs                          | 4,127,926          | 795,000            | -                  | -                  | 4,127,926          | 795,000           | -                 | -                 |
| Other services                              | 21,440,821         | 2,470,006          | 11,633,510         | 1,434,141          | 9,807,311          | 1,035,865         | -                 | -                 |
| <b>TOTAL REVENUES</b>                       | <b>316,168,023</b> | <b>265,756,609</b> | <b>156,492,407</b> | <b>133,838,299</b> | <b>103,006,725</b> | <b>75,159,544</b> | <b>56,668,891</b> | <b>56,758,766</b> |
| <b>EXPENDITURES:</b>                        |                    |                    |                    |                    |                    |                   |                   |                   |
| Salaries and associated costs               | 144,180,627        | 133,561,141        | 83,388,217         | 73,098,752         | 4,123,519          | 3,703,623         | 56,668,891        | 56,758,766        |
| Academic related costs                      | 54,135,420         | 50,420,184         | 17,665,725         | 18,932,954         | 36,469,695         | 31,487,230        | -                 | -                 |
| Student related costs                       | 4,808,535          | 5,619,857          | 1,419,720          | 1,512,913          | 3,388,815          | 4,106,944         | -                 | -                 |
| Administrative costs                        | 2,927,167          | 5,063,904          | 2,491,878          | 2,391,744          | 435,289            | 2,672,160         | -                 | -                 |
| Capital expenditure purchases               | 5,498,598          | 5,686,132          | 5,286,556          | 5,686,132          | 212,042            | -                 | -                 | -                 |
| Other costs                                 | 29,762,825         | 30,727,544         | 29,762,825         | 30,727,544         | -                  | -                 | -                 | -                 |
| Sponsored programs                          | 854,103            | 351,296            | -                  | -                  | 854,103            | 351,296           | -                 | -                 |
| Other services                              | 10,106,886         | 2,099,386          | -                  | -                  | 10,106,886         | 2,099,386         | -                 | -                 |
| Enterprise expenses                         | 27,427,517         | 20,146,148         | -                  | -                  | 27,427,517         | 20,146,148        | -                 | -                 |
| Contingency reserve                         | 14,340,275         | -                  | 14,340,275         | -                  | -                  | -                 | -                 | -                 |
| <b>TOTAL EXPENDITURES</b>                   | <b>294,041,953</b> | <b>253,675,592</b> | <b>154,355,196</b> | <b>132,350,039</b> | <b>83,017,866</b>  | <b>64,566,787</b> | <b>56,668,891</b> | <b>56,758,766</b> |
| <b>EXCESS OF REVENUES OVER EXPENDITURES</b> | <b>22,126,070</b>  | <b>12,081,017</b>  | <b>2,137,211</b>   | <b>1,488,260</b>   | <b>19,988,859</b>  | <b>10,592,757</b> | <b>-</b>          | <b>-</b>          |

## Notes to the Financial Statements

### 1. Summary of significant accounting policies

(a) **Accrual basis:** The financial statements of the Asian Institute of Technology have been prepared on the accrual basis except for depreciation accounting as explained in note 1(d) to the financial statements. The statement of revenues and expenditures – unrestricted current fund and restricted 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 or the net income or loss for the period as would a statement of income.

(b) **Fund accounting:** In order to ensure observance of limitations and restrictions placed on the use of the 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 that are in accordance with activities or objects specified.

Within each fund group, fund balances that are restricted by outside sources are so indicated and are distinguished from unrestricted fund allocated to specific purposes by action of the governing board. Externally restricted fund may only be utilized in accordance with the purpose established by the source of such funds and are in contrast with

unrestricted fund over which the governing board retains full control to use in achieving any of its institutional purposes.

Income derived from investments is accounted for as revenue in the unrestricted current fund, with the exception of general reserve and capital fund.

All other unrestricted revenues are accounted for in the unrestricted current fund. Restricted gifts, grants, appropriations and other restricted resources are accounted for in the appropriate restricted funds.

(c) **Assets and liabilities in terms of foreign currency outstanding at balance sheet date are converted into Baht at the approximate bank rates ruling at that date. Gains or losses on exchange are taken up in the statement of changes in fund balances as and when incurred.**

(d) **Physical plant and equipment are stated at cost at date of acquisition or fair value at date of donation in the case of gifts. Depreciation on physical plant and equipment is not recorded.**

### 2. Investment

|                                      | 1987<br>Baht | 1986<br>Baht |
|--------------------------------------|--------------|--------------|
| <b>(a) Restricted Fund</b>           |              |              |
| General                              | 43,441,893   | 42,416,603   |
| Endowment                            | 48,653,535   | 33,307,419   |
| General reserve                      | 116,726,101  | 108,189,757  |
|                                      | 208,821,529  | 183,913,779  |
| <b>(b) Capital Fund</b>              |              |              |
| Liquid assets                        | 17,841,142   | 13,422,372   |
| Maintenance and construction reserve | 1,230,298    | 6,250,806    |
|                                      | 19,071,440   | 19,673,178   |

### 3. Advance duties and taxes

|  | 1987<br>Baht | 1986<br>Baht |
|--|--------------|--------------|
| Employee personal income taxes             | 22,819,320   | 28,782,516   |
| Import duty and business tax on automobile | 147,762      | 2,459,237    |
| Others                                     | 2,035,679    | 5,968,763    |
|  | 25,002,761   | 37,210,516   |



The refund of the advance from the Royal Thai Government will be subjected to annual Government budget.

#### 4. Fund balances

|                                      | 1987<br>Baht | 1986<br>Baht |
|--------------------------------------|--------------|--------------|
| (a) Restricted Fund                  |              |              |
| General                              | 60,309,018   | 46,362,879   |
| Endowment                            | 48,811,204   | 33,346,927   |
| General reserve                      | 124,883,043  | 109,265,402  |
|                                      | 234,003,265  | 188,975,208  |
| (b) Capital Fund                     |              |              |
| Fixed assets                         | 935,391,801  | 888,468,620  |
| Liquid assets                        |              |              |
| – unallocated                        | 2,498,295    | 7,628,696    |
| Liquid assets                        |              |              |
| – allocated                          | 25,051,552   | 18,340,688   |
| Maintenance and construction reserve | 5,730,298    | 6,286,298    |
|                                      | 968,671,946  | 920,724,302  |

#### 5. Investments

At 30 June 1987, a fixed deposit of Baht 4.9 million (1986 – Baht 4.9 million) included in investments of General Reserve is pledged with a bank as a collateral against outstanding letter of guarantee issued by the bank.

#### 6. Reclassifications

Certain reclassifications have been made to the 1986 financial statements presentations for comparative purposes.

#### ACCOUNTANTS' REPORT TO THE TRUSTEES OF THE ASIAN INSTITUTE OF TECHNOLOGY

We have examined the accompanying balance sheets of the Asian Institute of Technology as at 30 June 1987 and 1986 and the related statements of changes in fund balances and revenues and expenditures – unrestricted current fund and restricted fund for the years ended 30 June 1987 and 1986 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.

In our opinion, the aforementioned financial statements present fairly the financial position of the Asian Institute of Technology as at 30 June 1987 and 1986 and the changes in fund balances and revenues and expenditures – unrestricted current fund and restricted fund for the years ended 30 June 1987 and 1986 in conformity with generally accepted accounting principles consistently applied.

Bangkok, Thailand  
24 November 1987

Portfolio of Contract and Grant Research 1987

IN PROGRESS

| Implementing Division/Center<br>Research Title  | Sponsor(s)                         | Principal Investigator(s)   | Grant Obligation |
|---|------------------------------------|---|------------------|
| <b>AFF</b>  |                                    |   |                  |
| Fish Production with Composted Water Hyacinth   | GTZ, FRG                           | Prof. Edwards   | US\$ 53,262      |
| Evaluation, Improvement and Demonstration of a Manual Soybean Seeder  | IDRC, Canada                       | Prof. Singh<br>Dr. Gee-Clough   | 146,000          |
| Heat Sterilization and Accelerated Drying of High Moisture Rice for Safe Storage  | USAID, Thailand                    | Dr. Jindal  | 150,000          |
| EC Tilapia Project  | EC                                 | Prof. Edwards   | 47,667           |
| Improving the Tractive Performance of Wheeled Tractors in Wet Paddy Fields  | EC/NIAE                            | Dr. Gee-Clough  | 58,590           |
| Application of Chemicals at the Farm Level in the Control of Aflatoxin in Stored Maize Cobs                                 | Rural Investment Overseas Ltd., UK | Dr. Ilangantileke<br>Dr. Athapol  | 4,846            |
| Case Study on the Economic and Technical Options of Integrated Urban Sanitation and Recycling Systems                       | GTZ, FRG                           | Prof. Edwards<br>Dr. Chongrak (EE)<br>Dr. Orth (EE)<br>Mr. Kammeier (HSD) | 18,285           |
| Teaching and Research, Campus West End Development at AIT   | AIT Research Initiation Grant      | Prof. Nielsen   | 31,942           |
| Development of Crop/Livestock/Fish Integrated Farming Systems for Small-Scale Farmers                                       | ODA, UK                            | Prof. Edwards   | 70,204           |
| Improvement of Irrigation Efficiency and Irrigation Association in Southeast Asia   | JICA, Japan                        | Dr. Mizutani  | 16,699           |
| Integrated Paddy/Fish Farming   | DANIDA, Denmark                    | Prof. Nielsen   | 5,672            |
| Grain and Forage Legumes for Rice-based Rainfed Farming Systems on Acid Sulphate Soils                                      | AIT Research Initiation Grant      | Dr. Gartner   | 726              |
| Harvesting and Handling of Tropical Fruits  | AIT Research Initiation Grant      | Prof. Gupta   | 342              |
| Design and Improvement in Small Farm Irrigations Systems  | AIT Research Initiation Grant      | Dr. Murty   | 971              |
| Preliminary Study of Rainfed Farming Systems in Ban Na District, Nakorn Nayok Province, Thailand                            | AIT Research Initiation Grant      | Dr. Peacock   | 971              |
| Development of an Integrated Fish Culture Involving Intensive and Extensive Culture Systems                                 | AIT Research Initiation Grant      | Dr. Lin   | 971              |
| Response to Fertilizers and the Economics of Rice, Corn and Corn + Legumes - Mix in the Acid Sulphate Soil of Bangkok Plain | AIT Research Initiation Grant      | Prof. Nielsen   | 971              |

| Implementing Division/Center<br>Research Title            | Sponsor(s)      | Principal<br>Investigator(s) | Grant<br>Obligation |
|---|-----------------|------------------------------|---------------------|
| Nitrogen Fixation by Azolla and Legumes                   | DANIDA, Denmark | Prof. Nielsen                | US\$ 5,000          |
| Fertilization Based on the Chemical Composition of Plants | DANIDA, Denmark | Prof. Nielsen                | 5,000               |
| Cattle Used for Beef and Milk Production and for Work     | DANIDA, Denmark | Prof. Nielsen                | 5,000               |

### CS

|   |                               |                   |             |
|---|-------------------------------|-------------------|-------------|
| Microcomputer-Based UNU Medical Consultation Systems for Rural Doctors                                    | UNU                           | Dr. Vilas         | US\$ 37,000 |
| Blackboard Model and Space Planning   | AIT Research Initiation Grant | Dr. Sadananda     | Baht 22,500 |
| Software Peripheral Coupler (SPC)<br>Software Auto Save for N.D. System<br>Program Analyser Program (PAP) | AIT Research Initiation Grant | Dr. Venkatachalam | 25,000      |

### ET

|  |                                       |   |                   |
|--|---------------------------------------|---|-------------------|
| Development and Maintenance of the Energy Park and Division Support                                | AFME, France<br>MAE, France           | Mr. Bouix<br>Dr. Cubizolles   | US\$ 400,000      |
| Theoretical and Experimental Studies on Solar Ponds and Their Applications                         | AFME, France<br>EGAT, Thailand        | Mr. Bouix<br>Dr. Jumpa  | 25,424<br>9,854   |
| Solar Collector Testing Facilities   | GTZ, FRG                              | Prof. Exell<br>Mr. Van Winden   | 51,356            |
| Project on Biogas Plants   | GTZ, FRG                              | Mr. Tentscher   | 218,000           |
| Assistance in Strengthening Overall Energy Planning and Policy Analysis Capability and Master Plan | UNDP/ESCAP<br>EC                      | Prof. Lucas<br>Dr. Codoni<br>Dr. Shrestha<br>Dr. Dang<br>Mr. Ambali<br>Mrs. Ricarte | 313,392<br>48,860 |
| Asian and Pacific Energy Planning Network (APENPLAN)   | EC                                    | Prof. Lucas<br>Dr. Codoni<br>Dr. Dang   | 46,825            |
| Energy Demand Analysis and Forecasting for Thailand  | EC                                    | Dr. Dang<br>Mr. Pongsa  | 257,600           |
| Characterization of Rural Energy Resources   | EC                                    | Dr. Dang<br>Mr. Jose  | 63,800            |
| Solar Powered Desiccant Refrigeration  | Illinois Institute of Technology, USA | Prof. Exell<br>Dr. Bhattacharya   | 48,000            |
| Suan-Som Photovoltaic Project  | A.M.I. Systems, France                | Dr. Lasnier<br>Mr. Bouix<br>Dr. Cubizolles  | 2,000             |

| Implementing Division/Center<br>Research Title  | Sponsor(s)            | Principal<br>Investigator(s)                                     | Grant<br>Obligation |
|---|-----------------------|--|---------------------|
| Energy Diagnosis and Demand<br>Forecasting of Capiz Province, the<br>Philippines                              | EC                    | Dr. Dang<br>Mr. Acosta<br>Ms. Canlas                             | US\$ 42,500         |
| Biocoal: Pyrolysis of Agro-forestry,<br>Agricultural and Processing Residues                                  | GTZ, FRG              | Dr. Bhattacharya<br>Dr. Shrestha<br>Mr. Chakraborty<br>Mrs. Sett | 116,644             |
| Evaluation and Performance Testing<br>of Biomass Gasifier   | GTZ, FRG              | Dr. Reines   | 111,680             |
| Testing and Certification of Energy<br>Products under Tropical Humid Climate<br>of Thailand                   | AFME, France          | Mr. Bouix<br>Dr. Mohanty<br>Ms. Macatol                          | 100,333             |
| AIT-ESCAP Photovoltaic Project in<br>Pakistan   | ESCAP                 | Dr. Lasnier<br>Mr. Ang   | 24,272              |
| Sectoral Energy Demand Studies in<br>Asian Countries  | ESCAP<br>MAE, France  | Dr. Chateau<br>Miss Patel  | 127,000             |
| Solar Timber Kiln in Sri Lanka  | UNCHS                 | Prof. Exell  | 30,000              |
| Analysis of Needs and Potential of<br>Policies on Cogeneration in Southeast<br>Asia                           | USAID                 | Prof. Foell  | 6,000               |
| Pilot Plant on Teaching and Research  | AFME, France/CNRS     | Dr. Mora   | 20,000<br>16,000    |
| Energy Auditing   | AFME, France          | Dr. Mora   | 13,000              |
| Regional Photovoltaic Activities<br>Research Expertise Information  | AFME, France          | Dr. Lasnier<br>Ms. Lwin<br>Mr. Ang<br>Mr. Fulton<br>Ms. Anna     | 25,000              |
| Pae Por Highland Project  | UNDP<br>BP Thai Solar | Dr. Lasnier<br>Ms. Lwin<br>Mr. Tanapat                           | 8,000               |
| R & D Project on Renewable Energy   | AFME, France          | Dr. Mora   | 20,833              |
| Energy Demand Analysis of the<br>Residential and Tertiary Sector in<br>Southeast Asian Countries              | AFME, France          | Dr. Chateau<br>Mr. Meraud  | 16,667              |
| Development of a Regional Energy<br>Data Base   | EC                    | Dr. Dang<br>Mr. Ambali<br>Mrs. Ricarte                           | 50,000              |
| EC Support to APENPLAN  | EC                    | Dr. Codoni<br>Dr. Dang   | 15,000              |
| Examination of the Energy Consequences<br>of Alternative Transportation Systems<br>in the Metro Manila Region | USAID                 | Prof. Foell  | 2,000               |



| Implementing Division/Center<br>Research Title  | Sponsor(s)                               | Principal Investigator(s)            | Grant Obligation |
|---|--|--------------------------------------|------------------|
| <b>EE</b>   |  |                                      |                  |
| Pollution Abatement Control Technology Records for Selected Agro-industries in ASEAN Region   | UNEP                                     | Dr. Chongrak                         | US\$ 3,500       |
| Environmental Impact Assessment of a Pulp and Paper Mill Effluent, Bang Pa-in, Thailand   | UNEP                                     | Dr. Chongrak<br>Mr. Sompol           | Baht 120,000     |
| Integrated Socio-Ecosystem Model of Pru To Daeng, Narathiwat, Thailand  | RID, Thailand                            | Dr. Chongrak<br>Dr. Ahn              | 44,000           |
| Hygienization and Stabilization of Night Soil and Septic Tank Sludge by Aerobic-Thermophilic Treatment  | GTZ, FRG                                 | Dr. Orth                             | DM 70,000        |
| Wastewater Treatment with Aquatic Macrophytes   | GTZ, FRG                                 | Dr. Orth                             | 234,000          |
| Application of Membrane Separation to Wastewater Treatment  | JICA, Japan                              | Dr. Yamamoto                         | Baht 206,208     |
| <b>GTE</b>  |  |                                      |                  |
| Impact of Quaternary Geology on Urban Development and Land Use of the Central Plain of Thailand   | IDRC, Canada                             | Prof. Prinya<br>Prof. Young          | Baht 1,900,260   |
| Survey Method for Transportation Planning in Developing Countries   | JICA, Japan                              | Dr. Miyamoto                         | 100,000          |
| Welded Wire Reinforced Earth (Mechanically Stabilized) Embankments with Cohesive Backfill on Soft Clay  | USAID                                    | Dr. Bergado<br>Prof. Balasubramaniam | US\$ 150,000     |
| Development of Under-Reamed Piling Technique and Equipment for Foundations of Low-Rise Houses/Structures in Low-Lying Marshy Areas Consisting of Organic Clay and Peat Deposits | UNDP                                     | Prof. Balasubramaniam<br>Dr. Bergado | 30,000           |
| <b>HSD</b>  |  |                                      |                  |
| Interlinkages between the Informal Activity and Settlement in Bangkok   | AIT Research Initiation Grant            | Dr. Amin                             | Baht 25,000      |
| Planning Legislation, ASEAN Countries   | IDRC, Canada                             | Mr. Kammeier                         | C\$ 100,000      |
| Microcomputer Test/Review Project   | GTZ/FRG                                  | Mr. Kammeier                         | DM 140,000       |
| SILP Version  | UN Habitat                               | Mr. Kammeier                         | US\$ 20,000      |
| Study on the Method to Evaluate Environmental Conditions  | JICA, Japan                              | Dr. Osakaya                          | Baht 200,000     |
| Study on the Urban Residential Environment in Asian Developing Countries  | Ministry of Education and Culture, Japan | Dr. Osakaya                          | 200,000          |

| Implementing Division/Center<br>Research Title      | Sponsor(s)              | Principal<br>Investigator(s) | Grant<br>Obligation |
|---|-------------------------|------------------------------|---------------------|
| Evaluation System for Townscape Design              | JICA, Japan             | Dr. Osakaya                  | US\$ 9,400          |
| Applied Nutrition for Rural Development – Phase III | EC                      | Dr. Tips                     | 16,800              |
| Thai-German Plant Protection Field Research         | TG-PPP/<br>MAAC-DAE/GTZ | Prof. Weber                  | 1,320               |

### SEC

|  |                               |                                  |              |
|--|-------------------------------|----------------------------------|--------------|
| Static Structural Analysis of Biogas Holders   | GTZ, FRG                      | Dr. Worsak<br>Mr. Tentscher (ET) | US\$ 100,000 |
| Development of a New Code of Practice for the Design of Structures in Southeast Asian Region   | JICA, Japan                   | Dr. Hasegawa                     | Baht 425,000 |
| Generation of Weighting Factors for Evaluating Management Performance on Construction          | AIT Research Initiation Grant | Dr. Chauhan                      | 25,000       |
| Geometric and Material Non-linear Analysis of Asymmetric Thin-Walled Structures                | AIT Research Initiation Grant | Dr. Kitipornchai                 | 25,000       |
| Problems of Concrete Structures in Asian Countries and Establishment of Rational Design Method | JICA, Japan                   | Dr. Ueda                         | 320,000      |

### WRE

|  |  |                           |             |
|--|--|---------------------------|-------------|
| Hydraulic Model Testing – Mae Taeng Hydropower Project, Thailand   | Norconsult A.S.,<br>Norway                       | Mr. Prida<br>Dr. Preecha  | US\$ 29,161 |
| Ao Phai Thermal Power Plant – Thermal Discharge Model Tests, Thailand  | Burns and Roe Co.,<br>USA                        | Prof. Suphat<br>Mr. Prida | 52,868      |
| Improved Large Scale Water Resources Development Planning  | GTZ, FRG   | Dr. Bogardi               | 100,000     |
| Computer Services, Management Consulting Services, Flood Control of Bangkok and Vicinity, Thailand                       | Sverdrup & Parcel and<br>Associates Inc., U.S.A. | Prof. Suphat              | 18,962      |
| Hydraulic Model Study of Pak Mun Multi-purpose Development Project, Thailand   | EGAT, Thailand                                   | Mr. Prida<br>Dr. Preecha  | 72,057      |
| Physical Oceanography and Data Management East Asian Seas  | NEB, Thailand                                    | Mr. Prida                 | 11,773      |
| Program of Consultancy Services in Training and Installation of Equipment and Data Processing ASEAN-US Watershed Project | Royal Forestry Department,<br>Thailand           | Mr. Prida                 | 4,905       |
| Integrated Socio-Ecosystem Model of Pru To Daeng, Narathiwat, Thailand   | Team Consulting<br>Engineers Co., Ltd            | Mr. Prida<br>Prof. Suphat | 60,283      |

| Implementing Division/Center<br>Research Title   | Sponsor(s)                                      | Principal<br>Investigator(s) | Grant<br>Obligation |
|--|---|------------------------------|---------------------|
| Irrigation Management Improvement by<br>Optimum Main System Operation  | AIT Research Initiation<br>Grant                | Mr. Loof<br>Dr. Paudyal      | US\$ 960            |
| <b>INRDM</b>   |   |                              |                     |
| Effect of Deforestation and Agricultural<br>Land Use on the Nutrient Level and<br>Suspended Solids Load of Tropical<br>Streams | EC  | Mr. Dekeyne<br>Dr. Orth (EE) | Baht 1,668,000      |
| Surface Water Evaluation in Northeast<br>Thailand: A Pilot Project Using Remote<br>Sensing                                     | NESDB, Thailand                                 | Dr. Kaew                     | 7,000,000           |
| Soil and Land Use Study in Pru To Daeng,<br>Narathiwat Province, Thailand  | Team Consulting<br>Engineers, Co./RID, Thailand | Dr. Apisit                   | 120,000             |
| Geomorphic Units Appearing on<br>Remote Sensing Imagery in Thailand  | National Research Council,<br>Thailand          | Dr. Apisit<br>Dr. Kaew       | 225,000             |
| Survey of Narcotics Plantations Using<br>SPOT Data in North and Northeast<br>Thailand  | French Government                               | Mr. Dekeyne                  | 150,000             |
| <b>RCC</b>   |   |                              |                     |
| Computerized Pest Surveillance and<br>Early Warning System for the Thai-German<br>Plant Protection Program, Thailand           | TG-PPP/DOAE                                     | Mr. Dias<br>Mr. Gonzales     | US\$ 85,100         |
| Computerized System for Planning and<br>Monitoring Mahaweli Development<br>Projects, Sri Lanka                                 | MASL/UNDP                                       | Mr. Dias                     | 52,700              |

## COMPLETED

| Implementing Division/Center<br>Research Title  | Sponsor(s)   | Principal<br>Investigator(s)                  | Grant<br>Obligation |
|---|--|---|---------------------|
| <b>A FE</b>   |  |   |                     |
| Resource Recovery and Health Aspects of Sanitation  | EC   | Prof. Edwards<br>Dr. Wee<br>Dr. Chongrak (EE) | US\$ 159,741        |
| Effect of Rainfall, Soil and Land Use on Soil Erosion in Solo Watershed, Java   | DANIDA, Denmark                                    | Dr. Jensen                                    | 6,051               |
| Prawn Hatchery Project  | Institute of Agricultural Engineering, Netherlands | Dr. Wee                                       | 5,060               |
| Effect of Stocking Density on Growth of Seabass Reared in Freshwater  | AIT Research Initiation Grant                      | Dr. Wee                                       | 2,500               |
| Analysis of Production Cost of Sugarcane and Sugar in Thailand  | OCSB, Thailand                                     | Mr. Prida (RRDC)<br>Dr. Athapol               | 14,000              |
| <b>CS</b>   |  |   |                     |
| A Thai CAI for Teaching Arithmetics in Prathomsuksa 6   | Ministry of Education, Thailand                    | Dr. Kanchit                                   | US\$ 8,700          |
| Development of a Computerized Primary Health Care MIS, Thailand   | Ministry of Public Health, Thailand                | Ms. Kanchana                                  | 25,920              |
| Development of Computerized Hydrological Modelling Capabilities at the Federal Flood Commission, Government of Pakistan | USAID, Pakistan                                    | Dr. Phien<br>Dr. Austriaco                    | 8,650               |
| <b>ET</b>   |  |   |                     |
| Field Trial Procedures to Assess the Behavior of Photovoltaic Modules under Natural Conditions                          | AFME, France                                       | Dr. Lasnier<br>Mr. Ang                        | US\$ 15,902         |
| Field Trial Procedures to Assess the Behavior of Photovoltaic Refrigerators under Natural Conditions of Operation       | AFME, France                                       | Dr. Lasnier<br>Mr. Ang                        | 13,623              |
| Solar Water Heater Characterization and Testing Method  | AFME, France                                       | Mr. Bouix<br>Mr. Suphachart                   | 15,551              |
| Improvement of the Dynamic Method of Testing to Determine Solar Thermal Collector Performance                           | AFME, France                                       | Mr. Suphachart                                | 15,551              |
| Energy Demand Analysis of the Residential and Tertiary Sector in Southeast Asian Countries                              | AFME, France                                       | Mr. Meraud                                    | 15,190              |
| AIT-ESCAP Photovoltaic Project in Indonesia   | ESCAP  | Dr. Lasnier<br>Mr. Ang                        | 42,120              |
| Direct Heat Gasifier for Drying Maize: Design, Development and Pilot Testing and Monitoring                             | Smith International Co., Thailand                  | Dr. Bhattacharya                              | 9,590               |



| Implementing Division/Center<br>Research Title   | Sponsor(s)  | Principal Investigator(s)   | Grant Obligation |
|--|---|---|------------------|
| Regional Information on Photovoltaics  | AIT Research Initiation Grant/AFME, France                      | Dr. Lasnier<br>Mr. Ang  | US\$ 2,500       |
| <b>EE</b>  |   |   |                  |
| Establishing Design Norms for Intermittent Water Supply Schemes  | WHO/PWA, Thailand   | Dr. Vigneswaran<br>Dr. Chongrak                                       | Baht 94,030      |
| Bangkok Solid Wastes Composition and Characteristics Study   | TAMS-PIRNE International Co.                                    | Dr. Chongrak<br>Mr. Sompol  | 165,000          |
| Case Study on Economic and Technical Options of Integrated Urban Sanitation and Recycling Systems                    | GTZ, FRG  | Dr. Orth<br>Dr. Chongrak<br>Mr. Kammeier (HSD)<br>Prof. Edwards (AFE) | DM 94,200        |
| Factors Affecting the Applicability of Water Hyacinth Systems for Wastewater Treatment in Southeast Asia             | GTZ, FRG  | Dr. Orth  | 50,000           |
| Decentralized Chemical Treatment of Industrial Wastewater in Developing Countries with Locally Available Chemicals   | BMFT, FRG   | Dr. Orth  | 50,000           |
| Oil Palm Research and Development in Thailand  | UNDP/FAO  | Mrs. Samorn<br>Dr. Vigneswaran<br>Dr. Shin                            | Baht 170,000     |
| <b>GTE</b>   |   |   |                  |
| Model Change Effect by New Transport   | JICA, Japan   | Dr. Murata  | Baht 63,000      |
| Foundation Investigations and Remedial Measures for Three Historical Sites in Lopburi Province, Thailand (Phase III) | Fine Arts Department, Thailand                                  | Dr. Bergado<br>Dr. Towhata  | 350,000          |
| Numerical Prediction of Differential Ground Surface Motion during Earthquake Liquefaction                            | Association for the Development of Earthquake Prediction, Japan | Dr. Towhata   | 184,000          |
| Soil Dynamics Study of Soils in Thailand   | JICA, Japan   | Dr. Towhata   | 65,000           |
| <b>HSD</b>   |   |   |                  |
| International Collaborative Research Project on Decentralization: Area Development in Practice in Asia               | AIT/ISS, Netherlands/FAO-RAPA                                   | Dr. Demaine   | US\$ 20,000      |
| Appropriate Urban Sanitation Systems, Case Study of Chonburi   | GTZ, FRG  | Mr. Kammeier  | DM 100,000       |
| Software Development (a) SILP Version I  | GTZ, FRG/ISS, Netherlands                                       | Mr. Kammeier  | US\$ 2,500       |
| Applied Nutrition for Rural Development -Phase II  | EC  | Dr. Tips  | 16,200           |

| Implementing Division/Center<br>Research Title   | Sponsor(s)   | Principal<br>Investigator(s)             | Grant<br>Obligation |
|--|--|--|---------------------|
| Belgian Low-Cost Housing Project   | Belgian Government/<br>Flemish Inter-University<br>Council | Dr. Tips                                 | US\$ 95,000         |
| Evaluation of Income Generating<br>Projects of Foster Parents Plan<br>International in Selected Asian and<br>African Countries     | Foster Parents<br>Plan International/USAID                 | Prof. Weber                              | 36,348              |
| <b>SEC</b>   |  |  |                     |
| Feasibility Study of Asian Software<br>for Microcomputer Applications in<br>Civil Engineering                                      | AIT Research Initiation<br>Grant                           | Dr. Worsak                               | Baht 66,250         |
| <b>WRE</b>   |  |  |                     |
| Efficient Use of Rainfall for Supple-<br>mentary Irrigated Lowland Rice,<br>Phase II   | GTZ, FRG   | Dr. Christoph                            | US\$ 6,334          |
| Hydraulic Model Study of Lower Mae<br>Ping Project for Lower Mae Ping<br>Barrage Scheme and Mae Wang<br>Diversion Scheme, Thailand | EGAT, Thailand   | Mr. Prida<br>Dr. Tawatchai               | 59,303              |
| Physical Model and Mathematic Model<br>of Heat Diffusion from Khanom Thermal<br>Power Plant, Thailand                              | Team Consulting<br>Engineers Co. Ltd.,<br>Thailand         | Mr. Prida<br>Prof. Suphat                | 67,924              |
| A Two-Dimensional Modelling of<br>Thonburi and Samut Prakan West,<br>Thailand  | Netherlands Engineering<br>Consultant Co.                  | Prof. Suphat<br>Dr. Tawatchai            | 18,962              |
| Extended Simulation Study of Bangkok<br>Aquifer System, Thailand   | Ministry of Industry,<br>Thailand                          | Dr. Das Gupta                            | 5,646               |
| Improvement of Tanker Approach at<br>Khanom Power Plant, Thailand  | EGAT, Thailand   | Prof. Suphat<br>Dr. Preecha<br>Mr. Prida | 24,113              |
| Site Investigation for Basic Design<br>Study for Constructing the Nakhon<br>Si Thammarat Fishing Port, Thailand                    | Ministry of Industry,<br>Thailand                          | Mr. Prida                                | 13,982              |
| <b>INRDM</b>   |  |  |                     |
| A Comparative Thematic Mapping<br>Analysis of SPOT Data of the Vientiane<br>Plain  | Mekong Committee/CNES                                      | Mr. Galtier                              | US\$ 30,000         |
| A Preliminary Study on Soil Geo-<br>morphological Mapping by Remote<br>Sensing Techniques  | AIT Research Initiation<br>Grant                           | Dr. Apisit                               | Baht 25,000         |
| Evaluation of SPOT Images for Geological<br>Applications   | Department of Mineral<br>Resources, Thailand               | Mr. Kozminski                            | 5,400               |

## Continuing Education Activities 1987

| Date                    | Implementing Division/Center | Title  | Sponsor/Co-organizers | No. of Participants |
|-------------------------|------------------------------|--|-----------------------|---------------------|
| <b>TRAINING COURSES</b> |                              |  |                       |                     |
| 12 Jan – 9 Apr          | INRDM                        | Short course on Remote Sensing   | FG                    | 18                  |
| 2 Feb – 26 Mar          | CEC/INRDM                    | Remote Sensing Technology (French)   | FG                    | 13                  |
| 9 Feb – 27 Mar          | CEC/HSD/EE/WRE/ET/AFE        | Planning and Management of Rural Development                                 | NORAD/NE/WB           | 17                  |
| 16 Feb – 8 May          | CEC/AFE/HSD                  | Agribusiness Management and Extension Methodology                            | WB/KU                 | 20                  |
| 7 Apr – 2 May           | CEC/WRE/CS                   | Groundwater Flow and Salt Water Intrusion Modelling                          | UNESCO                | 12                  |
| 8 June – 31 July        | CEC/WRE                      | Planning and Design of Small Scale Irrigation Projects                       | ADV                   | 8                   |
| 15 – 24 June            | CEC/ET                       | Fifth Asian School: Solar Energy Harnessing Energy Conservation in Buildings | AFME/UNESCO/KMIT      | 32                  |
| 20 June – 2 Aug         | ADPC                         | Disaster Management  | UNDP/USAID/OFDA       | 24                  |
| 29 June – 31 July       | CEC/EE/CS/WRE                | Flood Forecasting Model for Indus Basin                                      | USAID/PK              | 8                   |
| 6 – 31 July             | CEC/HSD                      | Computer Assisted Regional Planning  | WB/NORAD/SLG          | 14                  |
| 27 July – 4 Sept        | CEC                          | Management of Training Centers   | USAID/ADV             | 17                  |
| 2 – 14 Aug              | CEC/IEM                      | AIT-UC Berkeley Management Development Program                               | ADV                   | 32                  |
| 17 Aug – 10 Oct         | CEC/WRE                      | Small Scale Water Control Structures for Bangladesh                          | CIDA/BG/NHC           | 16                  |
| 7 Sept – 17 Oct         | CEC/IEM                      | Project Management   | ADV/WINROCK/ADB       | 15                  |
| 7 Sept – 17 Oct         | CEC/WRE/AFE                  | On-Farm Water Management   | ADV                   | 16                  |
| 7 Sept – 31 Oct         | CEC/HSD                      | Rural Regional Development Planning  | SLG/USAID             | 21                  |
| 7 Sept – 11 Nov         | INRDM                        | Applied Remote Sensing   | CDG/FG                | 28                  |
| 14 Sept – 10 Nov        | CEC/WRE                      | Planning and Design of Small Scale Water Resources Development Projects      | UNDP/WB/BG            | 12                  |

| Date            | Implementing Division/Center | Title  | Sponsor/Co-organizers | No. of Participants |
|-----------------|------------------------------|--|-----------------------|---------------------|
| 1 – 30 Oct      | ADPC                         | Aseismic Design and Construction of Structures                     | UP/PIVS               | 28                  |
| 12 Oct – 4 Dec  | CEC/INRDM                    | Intermediate Level Training Course on Remote Sensing               | FG                    | 10                  |
| 18 Oct – 29 Nov | ADPC                         | Disaster Management  | ADPC                  | 20                  |
| 26 Oct – 5 Dec  | CEC                          | Hydrometeorological Measurements and Analysis Techniques for Nepal | NG                    | 15                  |
| 1 – 23 Dec      | RCC                          | Microcomputer Applications to Plant Protection                     | TG-PPP                | 10                  |
| 7 – 18 Dec      | CEC/CS                       | Second Asian School on Computer Science                            | ICTP/UNESCO           | 35                  |

#### WORKSHOPS

|                 |                       |  |              |     |
|-----------------|-----------------------|--|--------------|-----|
| 9 Feb – 27 Mar  | CEC/HSD/EE/WRE/ET/AFE | Planning and Management of Rural Development                                     | NORAD/NE/WB  | 17  |
| 22 – 26 Jan     | SEC                   | Third Microcomputer Workshop for Structural Engineering Application and Practice | EIT          | 44  |
| 16 – 25 Feb     | CEC/HSD/EE/WRE/ET/AFE | Assessment of Technology and Its Impact on Society                               | UNESCO       | 11  |
| 6 – 15 Apr      | ADPC                  | UNHCR Energy Management  | UNHCR/UW     | 43  |
| 1 – 11 June     | ADPC                  | UNICEF Emergency Management  | UNICEF/UW    | 20  |
| 22 – 25 June    | WRE                   | Urban Flood Protection and Drainage in East and Southeast Asia                   | CU/DUT/BMA   | 120 |
| 26 – 27 June    | HSD                   | Slum Settlement Upgrading  | USAID/MIT/CU | 11  |
| 17 Aug – 5 Sept | INRDM                 | Digital Geographic Information Systems Using Microcomputers                      | ADB          | 23  |
| 29 – 30 Aug     | SEC                   | Fourth Microcomputer Workshop on Structural Engineering and Construction         | SEC          | 91  |

#### SEMINARS

|             |     |   |         |    |
|-------------|-----|---|---------|----|
| 23 – 30 Apr | HSD | Urban Land Management in India, New Delhi                   | NIUA    | 25 |
| 11 – 15 May | HSD | Seventh International Seminar: Integrated Urban Development | NHA/IHS | 35 |



| Date         | Implementing Division/Center | Title   | Sponsor/Co-organizers | No. of Participants |
|--------------|------------------------------|---|-----------------------|---------------------|
| 12 – 14 June | HSD                          | District Development Strategy for Hambantota, Sri Lanka   |                       | 25                  |
| 10 – 11 Aug  | INRDM                        | Natural Resources Faculty Development   | INRDM                 |                     |
| 26 Aug       | CS                           | Parallel Algorithms for Optimization of Networks  | CS                    | 22                  |
| 27 – 28 Aug  | SEC                          | Application Software in Structural Engineering and Construction                                   | SEC                   | 75                  |
| 12 – 18 Sept | INRDM                        | Topographic Applications of SPOT  | FG                    | 30                  |
| 6 – 8 Oct    | CEC/WRE/CS/SEC               | Reliability Analysis in Engineering with Civil Engineering Applications                           | ADV                   | 21                  |
| 11 – 14 Nov  | HSD                          | Rural Regional Development Network Seminar on Decentralization by Area Development in Asia, Nepal | TRU                   | 25                  |

#### INTERNATIONAL CONFERENCES

|             |         |   |                 |     |
|-------------|---------|---|-----------------|-----|
| 18 – 20 Nov | SEC     | International Conference on Cable-Stayed Bridges                        | ERTAT, Thailand | 486 |
| 7 – 11 Dec  | GTE     | Ninth Southeast Asian Geotechnical Conference                           | SEAGS/AIT       | 450 |
| 14 – 16 Dec | ET      | ASEAN-EC Energy Conservation  |                 | 45  |
| 14 – 18 Dec | SEC/GTE | US-Asia Conference on Engineering for Mitigating Natural Hazards Damage | UHM             | 100 |

## ABBREVIATIONS

|               |   |                  |  |               |   |
|---------------|---|------------------|--|---------------|---|
| <b>ADV</b>    | Advertised Course (no single sponsor)                       | <b>IBM</b>       | International Business Machines  | <b>ODA</b>    | Overseas Development Administration, UK                           |
| <b>ADB</b>    | Asian Development Bank                                      | <b>ICTP</b>      | International Center for Theoretical Physics   | <b>OECD</b>   | Overseas Economic Cooperation Fund                                |
| <b>AFME</b>   | French Agency for Energy Management                         | <b>IDRC</b>      | International Development and Research Center, Canada  | <b>OFDA</b>   | Office for Foreign Disaster Assistance                            |
| <b>AITAA</b>  | AIT Alumni Association                                      | <b>IHS</b>       | Institute of Housing Studies, the Netherlands  | <b>PIVS</b>   | Philippine Institute of Volcanology and Seismology                |
| <b>AITF</b>   | AIT Foundation Inc.   | <b>ILO</b>       | International Labour Organization  | <b>PG</b>     | Pakistan Government   |
| <b>ASEAN</b>  | Association of Southeast Asian Nations                      | <b>ISS</b>       | Institute of Social Studies, the Netherlands   | <b>PRC</b>    | People's Republic of China  |
| <b>BG</b>     | Bangladesh Government                                       | <b>JICA</b>      | Japan International Cooperation Agency   | <b>PWA</b>    | Provincial Water Authority of Thailand                            |
| <b>BMA</b>    | Bangkok Metropolitan Administration                         | <b>KEIDANREN</b> | Federation of Economic Organizations of Japan  | <b>RID</b>    | Royal Irrigation Department, Thailand                             |
| <b>BMFT</b>   | Federal Ministry of Research and Technology, FRG            | <b>KMIT</b>      | King Mongkut's Institute of Technology   | <b>ROC</b>    | Republic of China   |
| <b>CDG</b>    | Carl Duisberg Gesellschaft e.V., Germany                    | <b>KU</b>        | Kasetsart University   | <b>ROK</b>    | Republic of Korea   |
| <b>CIDA</b>   | Canadian International Development Agency                   | <b>MAAC-DAE</b>  | Ministry of Agriculture and Agricultural Cooperation - Department of Agricultural Extension, FRG | <b>SAREC</b>  | Swedish Agency for Research Cooperation with Developing Countries |
| <b>CNES</b>   | Centre National D'Etudes Spatiales                          | <b>MAE</b>       | Ministry of Foreign Affairs, France  | <b>SEAGS</b>  | Southeast Asian Geotechnical Society                              |
| <b>COSTED</b> | Committee of Science and Technology in Developing Countries | <b>MASL</b>      | Mahaweli Authority of Sri Lanka  | <b>SLG</b>    | Sri Lankan Government   |
| <b>CU</b>     | Chulalongkorn University, Thailand                          | <b>MIT</b>       | Massachusetts Institute of Technology  | <b>TG-PPP</b> | Thai-German Plant Protection Program                              |
| <b>DAAD</b>   | German Academic Exchange Services                           | <b>NE</b>        | Netherlands Government   | <b>TRU</b>    | Tribhuvan University, Nepal                                       |
| <b>DANIDA</b> | Danish International Development Agency                     | <b>NEB</b>       | National Environment Board, Thailand   | <b>UHM</b>    | University of Hawaii at Manoa                                     |
| <b>EC</b>     | European Community  | <b>NESDB</b>     | National Economic and Social Development Board, Thailand   | <b>UNCHS</b>  | United Nations Center for Human Settlements                       |
| <b>EGAT</b>   | Electricity Generating Authority of Thailand                | <b>NG</b>        | Nepal Government   | <b>UNDP</b>   | United Nations Development Program                                |
| <b>EIT</b>    | Engineering Institute of Thailand                           | <b>NHA</b>       | National Housing Authority, Thailand   | <b>UNEP</b>   | United Nations Environment Program                                |
| <b>ERTAT</b>  | Expressway and Rapid Transit Authority of Thailand          | <b>NHC</b>       | Northwest Hydraulics Consultant  | <b>UNESCO</b> | United Nations Educational, Scientific and Cultural Organization  |
| <b>ESCAP</b>  | Economic and Social Commission for Asia and the Pacific     | <b>NIAE</b>      | National Institute of Agricultural Engineering   | <b>UNIDO</b>  | United Nations Industrial Development Organization                |
| <b>FAO</b>    | Food and Agriculture Organization                           | <b>NIUA</b>      | National Institute of Urban Administration, India  | <b>USAID</b>  | United States Agency for International Development                |
| <b>FG</b>     | French Government   | <b>NORAD</b>     | Norwegian Agency for International Development   | <b>WB</b>     | World Bank  |
| <b>FRG</b>    | Federal Republic of Germany                                 | <b>OCSB</b>      | Office of Cane and Sugar Board, Thailand   | <b>WHO</b>    | World Health Organization   |
| <b>GTZ</b>    | German Agency for Technical Cooperation                     |                  |  |               |   |

## ACADEMIC DIVISIONS, CENTERS AND OTHER OFFICES

|            |   |              |  |
|------------|---|--------------|--|
| <b>AFE</b> | Division of Agricultural and Food Engineering           | <b>SEC</b>   | Division of Structural Engineering and Construction            |
| <b>CS</b>  | Division of Computer Science                            | <b>WRE</b>   | Division of Water Resources Engineering                        |
| <b>EE</b>  | Division of Environmental Engineering                   | <b>ADPC</b>  | Asian Disaster Preparedness Center                             |
| <b>ET</b>  | Division of Energy Technology                           | <b>ALWDP</b> | Agricultural Land and Water Development Program                |
| <b>GTE</b> | Division of Geotechnical and Transportation Engineering | <b>CEC</b>   | Continuing Education Center                                    |
| <b>HSD</b> | Division of Human Settlements Development               | <b>INRDM</b> | Interdisciplinary Natural Resources Development and Management |
| <b>IEM</b> | Division of Industrial Engineering and Management       | <b>RCC</b>   | Regional Computer Center                                       |

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| Division of Computer Science                            | Dr. H.N. Phien          |
| Division of Energy Technology                           | Dr. J.C. Mora           |
| Division of Environmental Engineering                   | Dr. Chongrak Polprasert |
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| Division of Human Settlements Development               | Mr. Raymon Archer       |
| Division of Industrial Engineering and Management       | Dr. Mario Tabucanon     |
| Division of Structural Engineering and Construction     | Dr. Akio Hasegawa       |
| Division of Water Resources Engineering                 | Dr. Ashim Das Gupta     |

### SCHOOL OF MANAGEMENT

Dr. Georges Hirsch  
(Project Manager)

### COORDINATORS OF INTERDISCIPLINARY PROGRAMS

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| <b>Natural Resources Development and Management</b> | Dr. John Lukens  |

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| Language Center                           | Mr. David Hall             |
| Library and Regional Documentation Center | Mr. Arthur Vespy           |
| Regional Computer Center                  | Dr. George Lewis           |
| Regional Research and Development Center  | Mr. Prida Thimakorn        |

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|                         |                      |
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| Dean of Student Affairs | Mrs. Hilary Wongkaew |
| Student Union President | Ms. Euay Singhakul   |



Dr. Mora succeeded Dr. N.J.D. Lucas in August 1987.  
 Dr. Hirsch was appointed in November 1987.  
 Dr. Lukens was appointed in August 1987.  
 Dr. Murty was appointed in July 1987.  
 Mr. Prida succeeded Dr. Jacques Valls in May 1987.  
 Ms. Euay succeeded Mr. Fernando C. Cal in September 1987.



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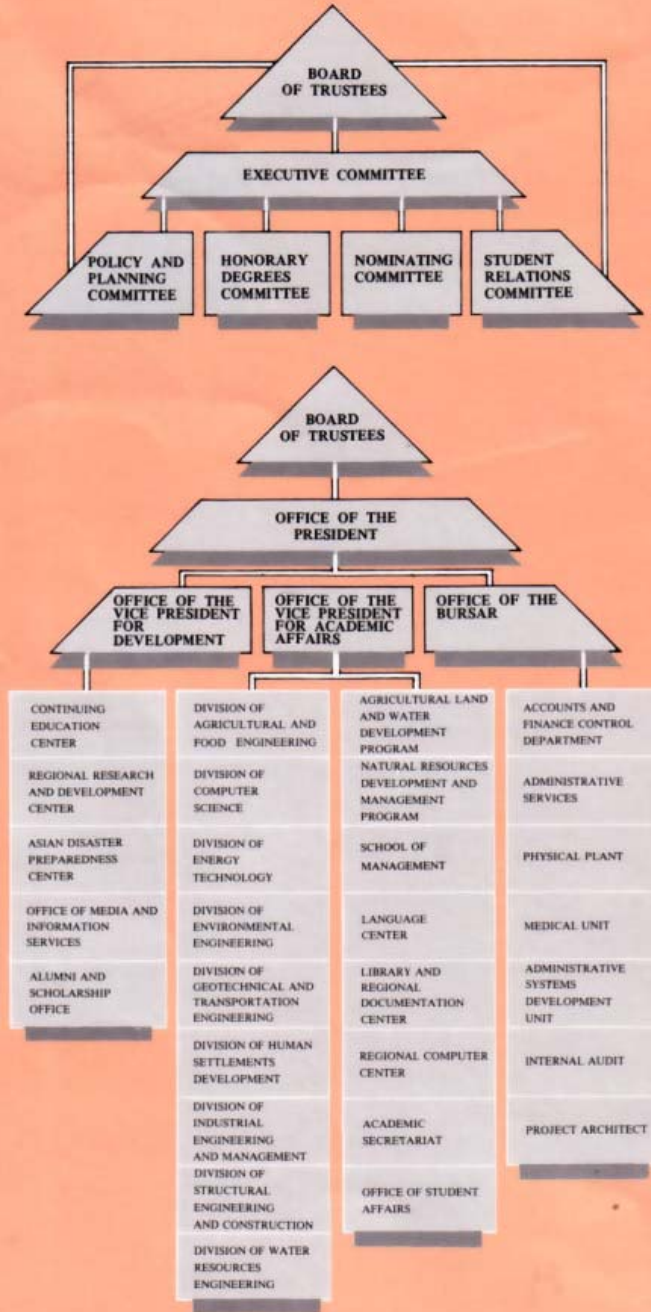
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year shown in brackets, normally  
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- <sup>+</sup> Elected from the Faculty
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December 1987

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