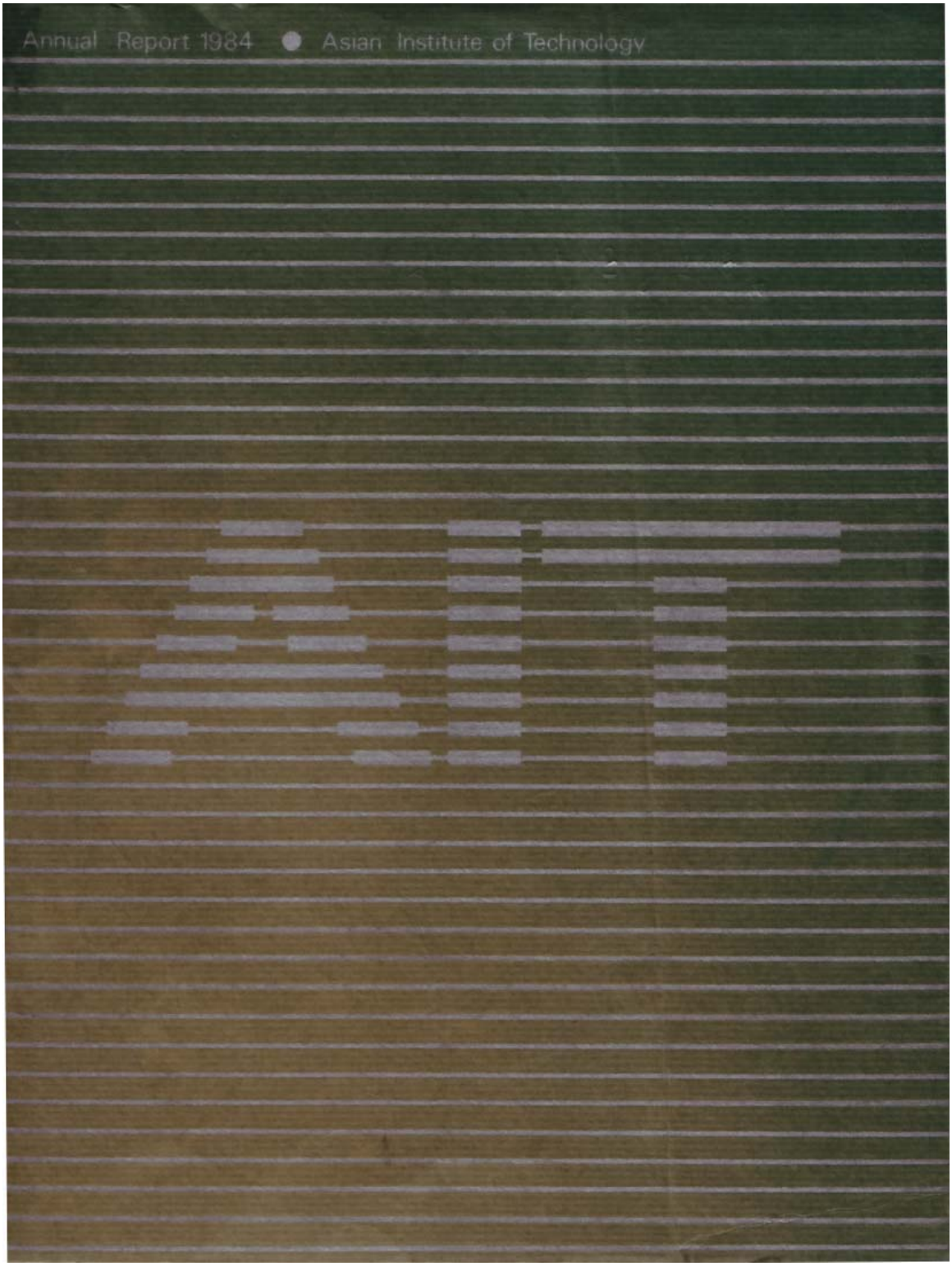
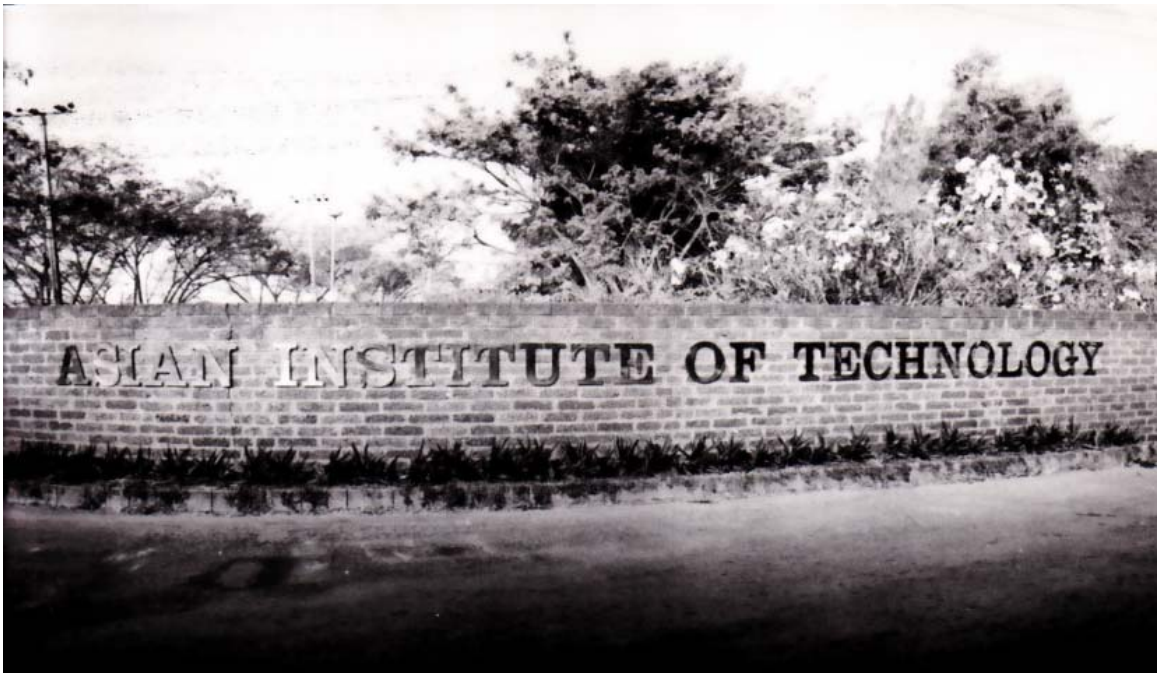
Annual Report 1984 ● Asian Institute of Technology



Cover: The silver lines spanning the green background signify AIT's celebration of its silver jubilee year, marking its attainment of 25 years of advanced technological education for Asia.



H.E. General Prem Tinsulanonda,
Prime Minister of Thailand
April 21, 1982

"The Asian Institute of Technology as a non-political educational institution of international renown is ideally placed to encourage and initiate cooperative research and development programs between the Asian countries. The Institute also has great potential to be an active catalyst in the exchange of cultural and technological programs. . . This Institute, and more importantly its graduates, have a significant role to play in the transfer of technologies and the development of technologies which must be appropriate to the needs of the region."

H.E. Tunku Abdul Rahman,
Former Malaysian Prime Minister
April 20, 1984

"The scientific subjects taught at the Asian Institute of Technology are all so important to countries of this region of Asia, whose populations multiply by leaps and bounds and whose methods of increasing the productivity of the land have been old-fashioned and outdated and are so now in some ways. . . . I have had an opportunity to discuss with the Malaysian graduates who have passed through AIT and they were full of praise for it. The knowledge they gained here has stood them in good stead in carrying out their work in Malaysia."

H.E. Mom Rajawong Kukrit Pramoj,
Former Prime Minister of Thailand
September 7, 1984

". . . I am sure that AIT, as a great seat of learning has a vital role to play in the development and progress of Thailand. I would like to assure members of the Institute and those who contribute to this Institute that your efforts are not in vain. You will be remembered for a long time to come by a grateful nation."

H.E. General Carlos P. Romulo,
Former Foreign Minister of the Republic of the Philippines
April 27, 1979

"AIT is relevant to the development of our respective countries. Since it is a higher institute of learning in sciences that impinge on the development of a country, AIT is not only relevant but important to our countries. What we need here in this region are more engineers, more scientists, more young men who are dedicated to lines of endeavor that will help in the development of our countries. At this time, AIT is not only relevant but is actually a necessity."

Mr. Soedjatmoko,
Rector of the United Nations University
August 21, 1981

"Here in Asia, as elsewhere in the Third World, science and technology must be firmly rooted in our own cultural soil and not blindly imitative of the high technology in the West . . . Based on past records, many AIT graduates will likely go on to influential positions in national governments—posts in which they will be able to do a great deal to ease the afflictions and suffering of fellow Asians. . ."

AIT ANNUAL REPORT 1984

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INSTITUTE FACTS IN BRIEF (1984)

STUDENT ADMISSION IN FULL TIME ACADEMIC PROGRAMS

	January	May	September	Total
Doctoral	6	3	1	10
Master's	86	84	99	269
Diploma	6	–	4	10

ENROLLMENT IN SPECIAL COURSES AND CONTINUING EDUCATION ACTIVITIES

	January	May	September	Total
ARRSTC	19	24	27	70
PCAD	14	3	28	45
FARMAP	–	7	–	7
CEC	217	30	333	580

DEGREES AND DIPLOMAS AWARDED

	April	August	December	Total
Doctoral Degree	1	1	1	3
Master's Degree	117	86	103	306
Diploma	10	5	8	23

FACULTY MEMBERS AND INTERNATIONAL ACADEMIC AND RESEARCH STAFF

January	May	September
129	133	140

ALUMNI

Total Alumni to Date 3,286
Number of Countries Represented by Alumni 31

DONORS

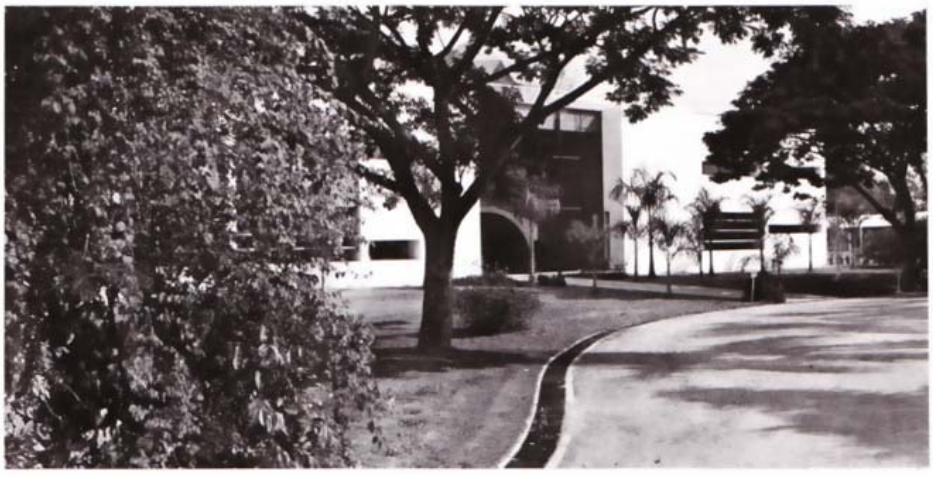
Type and Number
- Governments 21
- International Organizations 15
- Foundations 6
- National Government Agencies 14
- Business, Private & Others 22

Total Contributions in Cash and in Kind US$14,626,460

FINANCE

Total Assets US$42,066,900
Operating Budget 1983-1984
- Cash – US$4,642,000
- Kind – US$1,704,000 US$6,346,000

Increase in Assets 1983-1984 US$4,804,976



BOARD OF TRUSTEES

Professor Wahiduddin Ahmad (1986)
Former Vice Chancellor
Bangladesh University of Engineering and Technology
Dacca, Bangladesh

Dr. Se Hee Ahn (1986)
President, Yonsei University
Seoul, Korea

Ex **H.E. Mr. Andre' Arnaud (1985)**
Ambassador Extraordinary and Plenipotentiary
The French Embassy
Bangkok, Thailand

Ex **Professor A.S. Balasubramaniam (1986)**[+]
Ep Faculty Representative
Ip Geotechnical and Transportation Engineering
Asian Institute of Technology

Professor M.Y. Bernard (1985)
Professor Titular in Electronics
Conservatoire National des Arts et Metiers
Paris, France

Dr. Boonrod Binson (1985)
Former Chairman, Mekong Committee
for Thailand
Bangkok, Thailand

Mr. Kwang-Shih Chang (1985)
Former Minister of Economic Affairs
Republic of China

Ex **Mr. Chow Chowkwanyun (1986)**
Managing Director
The Thai Oil Refinery Co., Ltd.
Bangkok, Thailand

Ex **H.E. Mr. John Gunther Dean (1984)**
Ambassador Extraordinary and Plenipotentiary
Embassy of the United States of America
Bangkok, Thailand

Dr. Willi Ehmann (1987)
Head, Sub-Division of Bilateral
Cooperation with Developing Countries
in Asia and Europe
Ministry of Economic Cooperation
Federal Republic of Germany

Ex **Professor D.W. George, AO (1987),** *Vice Chairman*
Ep Vice Chancellor
Sr The University of Newcastle
New South Wales, Australia

Mr. Akira Harada (1986)
Executive Vice President, Member of the Board
Matsushita Electric Industrial Co., Ltd.
Japan

Ex **Sir James Holt, KBE (1984)**
Managing Director
Sino-Brit Limited
Bangkok, Thailand

Sr **Dr. John A. Hrones**[□]
Provost Emeritus
Case Institute of Technology
Cleveland, U.S.A.

Ex **H.E. Mr. R.L. Jermyn (1987)**
Ambassador Extraordinary and Plenipotentiary
New Zealand Embassy
Bangkok, Thailand

Ex **Professor C.S. Jha (1986)**
Ep Professor of Electrical Engineering
Sr Indian Institute of Technology
New Delhi, India

Ex **H.E. Mr. G.A. Jockel, CBE (1987)**
Ip Ambassador Extraordinary and Plenipotentiary
The Australian Embassy
Bangkok, Thailand

Professor F.S.C.P. Kalpage (1987)
Secretary
Ministry of Higher Education
Colombo, Sri Lanka

Professor Pisidhi Karasudhi[○]
President
AIT Alumni Association
Asian Institute of Technology

Professor Laeeq Ahmed Khan (1985)
OSD
Ministry of Education
Islamabad, Pakistan

Ex **Dr. Thanat Khoman (1987),** *Chairman*
Former Deputy Prime Minister,
Royal Thai Government
Bangkok, Thailand

Dr. Chen-Fu Koo (1986)
Chairman
Taiwan Cement Corporation
Taipei, Taiwan
Republic of China

Ex **H.E.Dr. Hans Christian Lankes (1985)**
Ambassador Extraordinary and Plenipotentiary
Embassy of the Federal Republic of Germany
Bangkok, Thailand

Ep **Professor Choh-Ming Li (1985)**
Sr Emeritus Professor of Business Administration
University of California
Berkeley, U.S.A.

Mr. James A. Linen[□]
Former President, TIME Inc.
U.S.A.

Ex **Mr. Oscar B. Mapua**[□]
Ep President
Mapua Institute of Technology
Manila, Philippines

Ex **Professor Fumio Nishino**
Ep Vice President for Academic Affairs
Ip Asian Institute of Technology
Sr

Mr. Erik Norsk (1985)
Managing Director, Kampsax A/S
Dagmarhus, Denmark

Ex **Professor Alastair M. North** ○
Ep President
Ip Asian Institute of Technology

Dr. Ir. A.E. Pannenborg (1986)
Vice President, VP
N.V. Philips, Gloeilampenfabrieken
Eindhoven, Netherlands

Ex **H.E. Mr. John L. Paynter (1986)**
Ambassador Extraordinary and Plenipotentiary
The Canadian Embassy
Bangkok, Thailand

Ep **Professor Jacques Peters (1985)**
Sr Director of the Class of Science,
Royal Belgian Academy
Belgium

Mr. Ralph A. Pfeiffer, Jr. (1985)
Chairman, IBM World Trade Americas/Far East Corp.
New York, U.S.A.

Professor S. Pramoetadi (1986)
Director of Academic Infrastructure
Directorate General of Higher Education
Indonesia

Sr **The Hon. D.J. Samuel (1985)**
President, Scallop Corporation
New York, U.S.A.

Ex **Dr. Pote Sapianchai (1985)**
Secretary-General
National Education Commission
Bangkok, Thailand

Ep **Professor Hiroyoshi Shi-igai (1986)**
Ip Professor, Institute of Structural Engineering
Sr University of Tsukuba
Sakura, Japan

Dr. Gerardo P. Sicat (1985)
Chairman
Philippine National Bank
Manila, Philippines

Professor Narsingh Narayan Singh (1986)
Secretary
Ministry of Education and Culture
Kathmandu, Nepal

Ex **H.E. Mr. H.A.J. Staples, CMG (1985)**
Ambassador Extraordinary and Plenipotentiary
The British Embassy
Bangkok, Thailand

Ex **H.E. Mr. Masatada Tachibana (1986)**
Ambassador Extraordinary and Plenipotentiary
The Embassy of Japan
Bangkok, Thailand

Mr. Tan Teck Chwee (1987)
Chairman
Public Service Commission
Singapore

Professor Leonard Unger (1986)
Professor of Diplomacy
Tufts University
U.S.A.

Dr. Puey Ungphakorn □
Former Governor of the Bank of Thailand
London, United Kingdom

Secretary: Emilie Ketudat (Mrs)
Asian Institute of Technology

Notes:

○ Ex Officio Member:
President, Vice President for Academic Affairs, The President of the AIT Alumni Association

□ Life member
In all other cases, the period of appointment terminates in the year shown in brackets, normally after the January Board meeting.

\+ Elected from the Faculty

Ep Member of Educational Policy Committee
Including Chairman of the ADRC, (as an Ex-Officio member)

Ex Member of Executive Committee

Ip Member of Institute Policy and Planning Committee

Sr Member of Student Relations Committee

Since the Institute's founding in 1959, some 35 countries have been represented in its Board of Trustees, donors, student body, faculty members and administrative and research staff.

FOREWORD

1984, the 25th Anniversary Year, has seen a continued growth in the various aspects of work of the Institute. I remain convinced that, as I said one year ago, in academic and financial terms the Institute is as healthy as almost any other institution of higher education. During my first months in office I have introduced myself to the overseas cooperation (and other) ministries in Washington, Tokyo, Taipei, Bonn, Paris, London, The Hague, Copenhagen, Oslo, Rome and Vienna. In addition, of course, I have paid a number of courtesy calls in Bangkok. In these offices of most of our major donors, I found active admiration for and interest in AIT. In all, positive support was expressed for the way in which the Institute combines the most advanced fundamental study in certain classical engineering disciplines with an interdisciplinary approach to the emerging technological problems of the region.

The most visible indications of the steadily growing support for the Institute (listed in the financial tables of this report) were the inaugurations of the extension to the Regional Experimental Center and the Energy Technology Building II. These fine additions to the campus facilities are appreciated by all in the Institute, and particularly by the students who work and study in them.

A steadily increasing budget has not lulled the Institute into any sense of academic complacency. In fact during the year a searching self-examination of the academic activities of the Institute was conducted, with widespread consultation, by the Institute Policy and Planning Committee. This resulted in the formation of an Academic Plan, presented to donors in September and forming much of the substance of the Institute Plan, 1985–88. In this plan emphasis is placed on consolidating thirteen existing priority fields of study which meet a number of criteria of relevance to Asian needs and of practicability. Quite apart from the document itself, this has stimulated everybody to analyse his own contributions against the background of the overall Institute objectives.

The year saw, too, the introduction of a new committee hierarchy for faculty participation in decision making. This involves the management principles that i) those who propose activities are not those who dispose resources for them, ii) participation is widest at the level of policy formulation and narrows at the level of authorization. It is hoped that in this way the many and varied experiences of faculty can be harnessed to improve academic decision making. During the year, furthermore, Professor Fumio Nishino (Vice President for Academic Affairs) and Mr. J.H. Bradridge (Bursar and Chief Administrative Officer) have taken up their posts and helped me tremendously. They have put considerable thought and energy into raising the quality of work in the Institute, and their efforts are much appreciated.

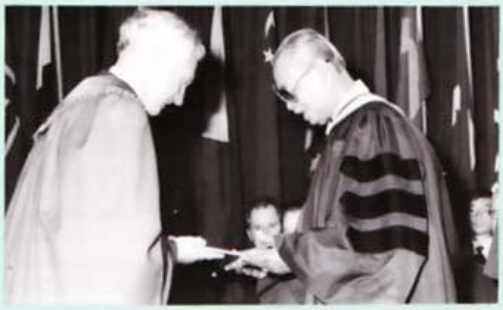
AIT President, Prof. Alastair M. North (second from left) with (from left to right) Prof. Ricardo Pama, Vice President for Development; Prof. Fumio Nishino, Vice President for Academic Affairs; and Mr. James Bradridge, Bursar and Chief Administrative Officer.

During the year, the Institute commenced a very significant upgrading of its computer facilities. Generous donations from the IBM Corporation and from the Government of Japan have allowed us to create two new microcomputer laboratories (one in the Division of Computer Applications and one in the Regional Computer Center) as well as to distribute personal computers to users in the other divisions and centers. Towards the end of the year we took delivery of a new IBM 3083 mainframe computer with associated peripheral equipment, all donated by IBM. We expect this expansion of computing capability to continue through 1985 with the assistance of the Government of Norway. We now offer to students "hands-on" computing experience second to none in the region.

In 1984, the Institute recognized three prominent men by the award of honorary degrees. These were given to H.E. Tunku Abdul Rahman, the former Prime Minister of Malaysia, in recognition of his continuing contributions to the development of his country; to former AIT President Robert B. Banks for work carried out through the Institute itself; and to Dr. Kasame Chatikavanij for work undertaken for the Electricity Generating Authority of Thailand. The Institute is proud to be associated with the endeavors of these men, its honorary graduates.

An annual report must contain a considerable quantity of factual and statistical data. Often this results in the dilution, or even elimination, of sentiment. I should like to close this foreword, therefore, by assuring readers of the report that working in the Institute generates excitement and enthusiasm, and that we all look back on the year's work with a measure of pride and also with an awareness of possibilities for greater service to the region in the years ahead.

Alastair M. North
President



From top to bottom: Presentation of Honorary Degrees of Doctor of Technology to H.E. Tunku Abdul Rahman, Dr. Robert B. Banks, and Mr. Kasame Chatikavanij.

THE ACADEMIC ENVIRONMENT

DEVELOPMENTS

New Composition of Academic Senate

The composition of the Academic Senate, which has the responsibility for recommending to the President policies for developing and conducting the Institute's academic programs, has been changed. The Academic Senate is now composed of the President (Chairman), the Vice President for Academic Affairs, the Vice President for Development, all Division Chairmen, all Center Directors, the Faculty Representative, the Dean of Student Affairs, two members from each of the nine divisions, one member from academic centers with five or more faculty, the Student Union President, and the Vice Chairman of the Faculty/Student Liaison Committee. Formerly all members of faculty holding the ranks of Assistant Professor, Associate Professor and Professor were members of the Senate.

The Senate enacts academic regulations, reviews programs of study, and approves course alterations and new courses. It is assisted by two standing committees namely, the Academic Development and Review Committee and the Faculty/Student Liaison Committee. Ad hoc committees may also be appointed by the Vice President for Academic Affairs to guide the Senate on particular matters.

Implementation of AIT's External Doctoral Program

The External Doctoral Program has been implemented, starting in 1984. Admission into the program is limited to candidates who are in active contact with their respective professions either in research or through professional practice for a minimum period of three years after receiving the last degree; and to those who have demonstrated keen interest in research by publishing in refereed journals and/or giving lectures and papers in recognized international conferences. Students must reside at AIT for a minimum of one term and will remain registered as a Doctoral student at the Institute until their degrees are conferred.

To complete the minimum requirement of at least 48 term credits beyond the Bachelor's degree, students may choose one of the following options:

1) be in residence at AIT while pursuing courses full time;

2) register for courses, study on their own and present themselves at a special examination for each course;

3) sit for comprehensive examinations on subjects decided by their program committee at AIT; or

4) a combination of the above.

AT the end of the third year following registration for the degree, students are expected to complete their advancement to candidacy. Requirements for the Doctoral degree should be completed within seven years after their advancement to candidacy.

Introduction of Three-Months' On-the-Job Training in Latest Energy Related Technologies in Europe

In a first-ever initiative introduced in September 1984, the Energy Technology Division sent 13 graduates (belonging to the August 1984 graduating class) for a three-months'on-the-job training with European research institutes and industrial firms engaged in energy-related work. The training, considered an extension of the Division's program, has brought Energy Technology graduates into close contact with latest developments and up-to-date technologies and methodologies in the field. Eventually, the training is expected to help ensure a smooth transition from a purely academic background to an experience of the "working world". The possibility of offering the training as a regular program for selected ET graduates is under consideration.

Individual grants for the trainees were awarded by the Commission of the European Communities, the French Agency for Energy Management and the Technical, Industrial and Economic Cooperation Agency in France. Cooperating organizations which have accommodated the trainees include the French Electricity Generation Authority, the Welsmere Energy Management in the UK, the Engineering Institute of Cologne, Germany, and Cosen Company (Ansaldo) in Italy.

The 13 ET graduates selected for the training are as follows:

Mr. L.A. Samaliarachchi (Sri Lanka)
Mr. Md. Nawsher Ali Moral (Bangladesh)
Mr. Dilip Nigam (India)
Mr. Hernando Daus Jose (Philippines)
Mr. Somchai Wongwises (Thailand)
Mr. Lee Jun Yaw (Taiwan)
Mr. Ahmed Sultan Uddin Babla (Bangladesh)
Mrs. Yeasmin Hasina (Bangladesh)
Mr. Kyaw Wynn (Burma)
Mr. Low Hui Seng (Malaysia)
Mr. Chumnong Sorapipatana (Thailand)
Mr. Somchai Chanchaona (Thailand)
Ms. Bupha Thongpasuk (Thailand)

ENROLLMENTS

Student enrollments in the Institute's academic programs during the calendar year followed a consistent pattern. Comparative enrollment figures in the nine academic divisions during the three trimesters of 1983 and 1984 are, as follows:

TERM	1983	1984
January	530	575
May	542	537
September	571	576

The corresponding enrollment figures in the Programs in Computer Applications Development (PCAD) and the Asian Regional Remote Sensing Training Center (ARRSTC) during the 1983 and 1984 trimesters are, as follows :

	PCAD		ARRSTC	
TERM	1983	1984	1983	1984
January	6	14	10	19
May	15	3	31	24
September	18	28	25	27

A comparison of the total number of students present at the Institute during the 1983 and 1984 trimesters indicates stable intake patterns by the Institute.

TERM	1983	1984
January	546	608
May	588	564
September	614	631

The small number of qualified applicants has restrained the desired growth of the Institute's Doctoral Program. Appropriate strategies to attract and recruit qualified candidates are being considered. By the end of 1984, enrollment in the Doctoral Program totalled only 26 students, three of whom were conferred their Doctorates in Engineering at the 1984 graduations. New registrants for the Doctoral Program, to whom offers of admission have been made during 1984, total 10 individuals.

Number of Students by Country in 1984

	Jan	May	Sept
Afghanistan	1	–	2
Bangladesh	30	29	29
Botswana	–	1	1
Brunei	1	–	–
Burma	8	7	7
Canada	–	1	1
Honduras	1	1	1
Hong Kong	4	2	5
India	41	40	39
Indonesia	43	33	40
Iran	3	3	3
Japan	8	9	12
Korea, Republic of	16	11	21
Malaysia	37	23	26
Malawi	1	1	1
Mongolia	–	–	2
Nepal	20	26	40
Pakistan	26	30	39
Papua New Guinea	–	1	1
People's Rep. of China	5	7	9
Philippines	52	54	53
Rep. of China	78	59	65
Singapore	10	3	3
Sri Lanka	45	47	55
Tanzania	2	1	3
Thailand	166	166	160
Vietnam	10	9	13
Total	**608**	**564**	**631**

GRADUATIONS

The Institute awarded the Diploma of AIT to 23 graduates and conferred Degrees upon 309 graduates in 1984. These totals are detailed as follows:

Graduation	Degrees	Diplomas
April	118	10
August	87	5
December	104	8

1984 Graduates Record

Degree	Graduation	Country																				Division									Total
		Afghanistan	Bangladesh	Brunei	Burma	Hong Kong	India	Indonesia	Iran	Japan	Korea, Rep. of	Malaysia	Malawi	Nepal	Pakistan	PRC*	Philippines	ROC**	Singapore	Sri Lanka	Tanzania	Thailand	Vietnam	AFE	CA	ET	EE	GTE	HSD	IEM	SEC	WRE	
M.Eng.	April	1	6	1	2	2	4	7		1	5	6		2	3		3	23		9		18	1	2		1	20	33			34	4	94
	August		6		1		6	1				3			4		12	9		1		12		12	10	32						1	55
	December		2				9	6	2	2	1	3		3	5		4	7	1	9		12	1	3	2	1	1	2	1	20	1	36	67
M.Sc.	April				1			1			2					1		3		1		13	1				12	8	3				23
	August		1		1			1				3					2	2		4		16	1	9	16	3	2		1				31
	December		2		1		1			1	2	1	1	2	3		4	2		2	1	12	1	2	1	1	1		29	2			36
D.Eng.	April							1																			1						1
	August																					1										1	1
	December		1																											1			1
Dip. AIT	April		3									4										2	1					1	3	4		2	10
	August		1											2								2					4					1	5
	December		1					2						1		1						2		3	3	1							8
Totals		1	23	1	6	2	21	18	2	4	10	20	1	10	15	2	25	46	1	26	1	90	6	31	32	39	41	44	37	27	35	45	332

* People's Republic of China
** Republic of China

Honorary Degrees

In recognition of their varied contributions to the region's development, as well their own professional achievements, the Institute conferred Honorary Degrees of Doctor of Technology on H.E. Tunku Abdul Rahman, former Prime Minister of Malaysia; Dr. Robert Banks, former AIT President; and Mr. Kasame Chatikavanij; General Manager and Board Director of the Electricity Generating Authority of Thailand.

The awards were made at separate presentations during the Institute's graduation ceremonies in April, August and December 1984.

AIT Awards

Two new awards, in addition to the Tim Kendall Memorial Prize, are now presented to outstanding graduates of the nine academic divisions. The two additional awards namely, the Hisamatsu Prize and the Institute Prize, have been authorized by President Alastair North starting in the April 1984 graduation. Like the Tim Kendall Memorial Prize, the two new awards are based on the students' academic excellence during their programs of study and their thesis or special study. The awards each provide a monetary reward of US$200 and a Certificate of Award.

Henceforth, all three graduation prizes will be awarded in the three annual graduation ceremonies held for the nine academic divisions, as follows: August (AFE, CA, ET); December (HSD, IEM, WRE); and April (EE, GTE and SEC). Selection of prize recipients is made by a screening committee composed of the Vice President for Academic Affairs (Chairman), the Faculty Representative to the Board of Trustees, the most senior faculty member, the Chairman of the Faculty/Student Liaison Committee, the President of the Student Union and the Dean of Student Affairs.

The Institute Prize is given from funds provided by AIT. The Hisamatsu Prize is given from funds provided in 1982 by Professor Yoshihiro Hisamatsu, former Dean of the Faculty of Engineering at the University of Tokyo and now Adviser (Technology), Nisshin Steel Co., Ltd. of Japan. The Tim Kendall Memorial Prize was established in 1981 from funds provided by the United Kingdom AIT Appeal, in memory of Mr. R.M. (Tim) Kendall, former member of the AIT Board of Trustees from 1971 to 1981.

The 1984 recipients of these awards are noted below.

From left to right: Mr. Rakesh Bhatia, Mr. Hsu Lung-Cheng and Mr. Satish Verma.

Mr. Anil Christopher Wijeyewickrema

Mr. Bappa Mazumdar

Mr. Damika Sampath Wickremesinghe

Mr. Priyantha Parakum Gunaratna

Ms. Mary Jane G. Novenario

Mr. Selvanayagam Kingsley Gnanendran

GRADUATIONS	HISAMATSU	INSTITUTE	TIM KENDALL
April	Mr. Anil Christopher Wijewickrema (SEC), Sri Lanka	Mr. Bappa Mazumdar (EE), India	Mr. Damikar Sampath Wickremesinghe (GTE), Sri Lanka
August	Mr. Rakesh Bhatia (ET), India	Mr. Hsu Lung-Cheng (CA), Republic of China	Mr. Satish Verma (AFE), India
December	Mr. Priyantha Parakum Gunaratna (WRE), Sri Lanka	Ms. Mary Jane Garing Novenario (HSD), Philippines	Mr. Selvanayagam Kingsley Gnanendran (IEM), Sri Lanka

FACULTY AND INTERNATIONAL RESEARCH STAFF

Critical to the success of a regional post graduate institution, such as AIT, are the academic background and career performance of its teaching and research staff. AIT draws a unique strength from its international roster of faculty members and research staff, totalling 129, 133 and 140 during the January, May and September 1984 terms, respectively, and selected from some of the most highly respected academic and related institutions in the region and elsewhere.

Representing a comprehensive range of disciplines, AIT's international community of teaching and research staff was drawn from 27 countries in 1984, with new members joining from Burma, New Zealand and Norway.

Faculty promotions, appointments and resignations are given on page 15, while a complete list of faculty members in 1984 starts on page 50.

Faculty and International Academic & Research Staff During 1984

Country of Origin	January Term			May Term			September Term		
	Faculty	Staff	Total	Faculty	Staff	Total	Faculty	Staff	Total
Australia	5	1	6	5	2	7	6	2	8
Bangladesh	3	2	5	2	2	4	2	2	4
Belgium	2	–	2	2	–	2	3	–	3
Burma	–	–	–	–	–	–	–	1	1
Canada	2	1	3	2	1	3	2	1	3
China, Republic of	2	–	2	2	–	2	2	–	2
Denmark	2	–	2	2	–	2	3	–	3
France	5	2	7	5	2	7	5	2	7
Germany, Federal Republic of	6	1	7	6	1	7	6	1	7
India	8	3	11	12	3	15	10	4	14
Iran	–	1	1	–	1	1	–	1	1
Italy	1	–	1	1	–	1	1	–	1
Japan	7	–	7	7	–	7	7	–	7
Korea, Republic of	1	–	1	1	–	1	–	–	–
Malaysia	1	1	2	1	1	2	1	1	2
Nepal	1	2	3	1	2	3	1	2	3
Netherlands	2	–	2	1	–	1	3	1	4
New Zealand	–	–	–	1	–	1	1	–	1
Norway	–	–	–	1	–	1	1	–	1
Pakistan	1	2	3	1	2	3	1	2	3
Philippines	3	3	6	3	3	6	3	3	6
Sri Lanka	3	2	5	3	2	5	3	3	6
Switzerland	1	–	1	1	–	1	1	–	1
Thailand	19	12	31	18	12	30	18	11	29
UK	6	2	8	6	2	8	8	2	10
USA	8	3	11	8	3	11	8	3	11
Vietnam	1	1	2	1	1	2	1	1	2
Totals	90	39	129	93	40	133	97	43	140

Faculty Promotions, Appointments and Resignations During 1984

Promotions

From Associate Professor to Full Professor:	Effective Date
R.H.B. Exell	30 April 1984
G. Singh	30 April 1984
From Assistant Professor to Associate Professor	
H.R. Clarke	1 February 1984
O. Fujiwara	1 February 1984
J.R. Jensen	1 February 1984
G. Rantucci	1 May 1984

Resignations

Professor:	
M.N. Sharif	18 March 1984
Associate Professor:	
L. Fox III	23 July 1984
W.M. Hodson	12 July 1984
G.E. Johnson	26 August 1984
A. Lind	18 June 1984
K. Shanker	21 August 1984
Assistant Professor:	
F. Blanchard	30 November 1984
D.I. Hertzmark	31 March 1984
K.H. Kim	22 August 1984

New Appointments

Professor:	
D.M. Brotton	1 September 1984
F. Nishino	25 April 1984
Associate Professor:	
D. Borel	15 February 1984
D.G. Carmichael	11 May 1984
M. Dyhr-Nielsen	17 September 1984
R.A. Hawkey	1 December 1984
E.D. Setty	3 January 1984
R.J. Whiteley	1 August 1984
Assistant Professor:	
M.C. Brown	17 September 1984
T. Onishi	19 January 1984
M.B. Øverby	1 May 1984
G. Storer	1 May 1984
Y.G. Van Frausum	20 October 1984
Instructor:	
Kanchana Kanchanasut	16 January 1984
G. Kozminski	13 November 1984
Long-Term Visiting Faculty Member:	
M.L. Bryan	15 August 1984
S.R. Goldin	1 August 1984
J.E. Lukens	24 August 1984
K.T. Rudahl	1 August 1984
R.D. Verma	1 September 1984
B.K. Worcester	1 August 1984
Short-Term Visiting Faculty Member:	
J.L. Batra	1 May 1984
I. Berninger	2 July 1984
P. Blaser	18 May 1984
R.L. Chauhan	14 January 1984
D. Deschoolmeester	3 October 1984
L.F. Gelders	9 September 1984
C.P. Gupta	9 May 1984
R.S. Gupta	9 September 1984
H.G.J. Huizing	28 August 1984
M. Ibramsha	21 May 1984
J. Mondot	13 October 1984
V.V.N. Murty	13 October 1984
N. Shuto	21 May 1984
M. Sugawara	1 September 1984
K.S. Thio	26 October 1984
D.N. Trikha	20 May 1984
C. Venkobachar	1 September 1984
V. Zajac	3 January 1984

PUBLICATIONS

Publications are a distinct measure of the academic excellence and productivity of AIT's faculty members and research staff. A statistical summary of publication activities at the Institute in 1984 is presented in the table below.

Summary of Publications During 1984

Division/Center	Number of Publications				
	▪	▪▪	▪▪▪	▪▪▪▪	▪▪▪▪▪
Agricultural and Food Engineering	4	10	3	–	17
Computer Applications	7	5	1	1	14
Energy Technology	4	6	2	2	14
Environmental Engineering	13	15	4	1	33
Geotechnical and Transportation Engineering	6	13	6	3	28
Human Settlements Development	–	3	12	2	17
Industrial Engineering and Management	15	5	2	1	23
Structural Engineering and Construction	12	12	1	1	26
Water Resources Engineering	4	8	2	1	15
Asian Regional Remote Sensing Training Center	2	14	2	–	18
English Language Center	–	3	–	1	4
Library and Regional Documentation Center	4	2	–	–	6
Regional Computer Center	–	1	–	–	1
TOTALS	71	97	35	13	216

▪ Research Journal Paper
▪▪ Conference Paper
▪▪▪ Research Report
▪▪▪▪ Edited Proceedings/Book
▪▪▪▪▪ Total Publications

Proceedings of the 4th Congress of Asian Pacific Regional Division–International Association for Hydraulic Research

Local Participation in FELDA Settlements, West Malaysia

Information System of Water Resource Development in Thailand

Re-Use of Cesspool Slurry and Cellulose Agricultural Residues for Fish Culture

Agricultural Practices Under Rainfed Conditions in Thailand

Research in Planning for Human Settlements: Guidelines and Practical Example

Monitoring of Thai-German Land Settlement Promotion Projects

A Review of the Development and Land Use Problems in Bangkok

CONTINUING EDUCATION

The Continuing Education Center (CEC),

established in 1980, assists in disseminating and updating the expertise of engineers, scientists, managers, planners and other development agents in Asia.

As the need for professional upgrading becomes widely recognized, CEC has built up its reputation as a regional focus for intensive short course training and technology dissemination. Last year, the Institute returned to employment more than 2,000 professionals upgraded through continuing education, with the bulk of the training conducted with the assistance of CEC.

At AIT, continuing education has become a necessary Institute and faculty endeavor, alongside the major activity of degree work.

Some major projects undertaken by CEC on contract in 1984 are described below.

Development of Small-Scale Water Resources, Royal Thai Government

Large reservoirs, river pumping systems and dams have not met the minimum requirements for water for domestic use, subsistence agriculture and other related activities. In Northeast Thailand, for example, only about 20% of the rural population benefit from these large projects. To rectify the situation, the Thai Government has launched a nationwide program to develop small-scale water resources projects, including tanks, shallow or deep wells, and natural or dug ponds in areas far from water sources.

CEC has been engaged to conduct the nationwide program which consists of a two-tiered small-scale water resources development training program for four groups of local officials. One tier is a three-day training seminar for village officials and farmer leaders to discuss basic methods and techniques in the selection, construction, operation and maintenance of water projects. The second-tier courses are simultaneously held to update engineers and technicians, development officers and administrative officers, on recent trends and techniques concerning the planning, design, construction and operation of small-scale water resource projects, particularly irrigation systems.

Some 1,500 local officials from the northeastern, central, northern and southern regions of Thailand undertake this program annually.

On-Farm Water Management, Royal Thai Government

Irrigated agriculture is considered to be the largest, albeit inefficient, user of water in the Third World. About half of available irrigation water is lost during delivery due to defective irrigation design, as well as to inefficient operation and maintenance of irrigation channels.

CEC's on-farm water management course covers the following:

- Basic irrigation concepts, soil-water-plant relationships, physical and chemical properties of soils
- Evaluation, selection and improvement of different irrigation methods
- Utilization of field measurement techniques to evaluate water control and irrigation efficiencies
- Efficient planning of irrigation supplies according to crop demand and project demand.

This four-week course has been conducted several times in the Thai language for RID engineers in Thailand, and regionally in the English language for engineers from India, Sri Lanka, Malaysia, Pakistan, Bhutan, the Philippines, Indonesia, and Thailand, under EEC sponsorship.

Rural Road Construction and Maintenance, Bangladesh Government

The importance of rural roads in agricultural development is a recognized fact. To support food production, feeder and farm-to-market roads must be constructed. CEC's most recent participation in a USAID-financed rural road development project in Bangladesh has been the development of a three-week course on rural road construction materials and techniques, including the use of locally available materials and low-cost, labor-intensive road building technologies; and the application of simple and effective methods in planning and implementing road maintenance programs.

THE RESEARCH ENVIRONMENT

The Regional Research and Development Center (RRDC), set up in November 1982, undertakes specialized research in engineering, science, technology transfer and allied fields, and multi-disciplinary studies on problems relevant to the development of the region. A major objective of RRDC is to foster regional cooperation in research, which can in turn assist the developing countries in the region in the formulation and implementation of their development strategies. RRDC draws on the professional expertise and other resources available at AIT.

The scope of RRDC's activities covers basic areas relevant to national development efforts; case studies or country-specific studies on problem areas to assist the formulation of national policies; the development of technologies appropriate to the resources and needs of developing countries; the impact and problems derived from technology transfer; the development of data bases for the formulation of integrated national policies, strategies and action plans; and feasibility studies on specific factors related to development projects.

Flood Routing and Control Alternatives of Chao Phraya River for Bangkok

Flooding in Bangkok, resulting principally from direct rainfall, high tidal stages in the Chao Phraya river during the peak flow periods, and overland flow from adjacent areas, is a very serious economic and political problem. To alleviate flood damage, this study examines two alternative structural schemes, as follows: diversion of a portion of flood peaks at a selected diversion location for conveying through a by-pass channel to the Gulf at a location away from the river mouth; and the dredging, widening, diking and construction of cut-off channels to increase flood conveyance capacity. In addition, capital and operating costs, as well as the economic and social side effects of each scheme, are also studied.

Principal Investigators: Prof. Anat Arbhabhirama, Prof. Suphat Vongvisessomjai, Dr. Tawatchai Tingsanchali. (Supported by NESDB, RTG; with World Bank funding).

Policy Study on Agricultural Development and Related Activities in Thailand

While accounting for 70% of the country's total employment and 25% of all its products, agriculture has grown much slower than other sectors in the economy.

The scarcity of new agricultural land that can be opened makes increased output in terms of yield per rai the only way to raise production.

This project reviews current policy in agricultural production, marketing, processing, exporting, and related activities, taking into account its effects on farmers and on overall economic and social development. The project also analyzes the appropriateness and suitability of this policy, recommends steps for the coordination and integration of plans of action by all responsible ministries; and identifies policy areas which require additional detailed study.

Flooding in Bangkok, tropical farming in Thailand, and acute shortage of water supply in many rural areas of Thailand. Opposite page, bottom picture: monitoring of water quality in a waste-fed fish pond.

Principal Investigators: Prof. Anat Arbhabhirama, Dr. John C.S. Tang. (Supported by NESDB, RTG; with World Bank funding).

Preparation of the National Decade Masterplan for Rural Water Supply and Sanitation in Thailand

The preparation of a masterplan for rural Thailand's water supply and sanitation is the first essential step within the context of the "National Water Supply and Sanitation Decade", declared by the Royal Thai Government in response to the UN decade.

The masterplan focusses on specific policies, targets and action programs for the provision of water supply and excreta disposal facilities to service rural communities. It seeks appropriate

and feasible solutions for the provision of safe drinking water and adequate sanitation for the rural population, depending on the specific conditions of each region under study.

Principal Investigators: Prof. Anat Arbhabhirama, Prof. N. Thanh, Mrs. Samorn Muttamara. (Supported by NESDB, RTG; with World Bank funding).

Surface Water Evaluation in Northeast Thailand: A Pilot Project Using Satellite Remote Sensing

Utilizing Landsat data and associated analysis techniques to inventory surface water availability in Northeast Thailand, this project provides information on water resources with regard to their availability, extent and quantity, in relation to their location and the time of year. The mapping, while detecting changes in surface water with time, includes land use/land cover types, such as agricultural land, urban land, forest and non-forest land, as bases for water requirement estimation. The project will also develop a complete information system on surface water projects in the area and transfer the use of remote sensing to government personnel for planning and implementing future water resources development programs.

Principal Investigators: Prof. Anat Arbhabhirama, Dr. Kaew Nualchawee, Dr. Buddy H. Atwell, Dr. Krisorn Jittorntrum. (Supported by NESDB, RTG; with World Bank funding).

Agricultural and Food Engineering

Water Resources Planning and Development for the Fifth Plan, Thailand

The project has sponsored several studies on priority water resource development issues for Thailand. A comprehensive information data base has been developed from available documents and data on specified water resource development projects of line government agencies, provincial and local planning offices, international agencies, and private organizations and enterprises. The Water Resources Information Collection, a multi-purpose information resource base, has been established as a result.

Principal Investigator: Dr. Apichart Anukulamphai. (Supported by NESDB, RTG).

Information System of Water Resources Development in Thailand: (PHASE II)

A computer-based decision support system has been developed to assist water resources administrators in strategic planning, management control and operational control in Thailand. A prototype system has been designed and tested at AIT. Based on the testing, the system has been improved and is now in active use in the Office of the Prime Minister.

Principal Investigator: Prof. Gajendra Singh. (Supported by the Office of the Prime Minister, RTG).

Re-Use of Human Waste (Cesspool Slurry) and Cellulose Agricultural Residues for Fish Culture, Bangkok

In research studies carried out both on the AIT campus and at the family level in villages to recycle organic wastes to fish, cesspool slurry has been simultaneously treated and recycled into the fish tilapia for use as animal feed in earth ponds on campus. The giant duckweed Spirodela has also been cultivated on cesspool slurry on campus as animal feed. Village level trials have been conducted to assess the use of under-utilized resources on the farm in fish culture, mainly duckweeds, submerged aquatic weeds and termites. The initial intention is for the farmers to use composted rice straw as a fish pond input. However, the use of composted rice straw in campus-based trials has yielded unsatisfactory results.

Principal Investigator: Dr. Peter Edwards. (Supported by ODA, UK).

Computer Applications

Agricultural Practices Under Rainfed Conditions in Thailand

In order to further evaluate the potential success of rainfed agriculture in Thailand, the mathematical model previously developed by AIT for paddy fields in the Northeast has been modified, to enable the prediction of suitable planting dates for economic crops in various climatic conditions and to produce handbooks for use as guidelines by agricultural extension workers and farmers in Thailand. Salient points in this research are the following: the use of the Penman and Pan Evaporation methods to estimate potential evapotranspiration; the distinction made between the equivalent water depths at saturation and field capacity; the definition of the minimum water depth used in the determination of stress days, according to a dynamic approach for upland crops; and the adoption of stress days and drainage as decision factors in simulation trials.

Application of the model to different areas in the different climatic regions indicates that one can avoid the occurrence of both the stress days and large amounts of drainage water by simply shifting the planting date. Moreover, the amount of supplementary irrigation water can also be estimated accordingly.

Principal Investigators: Dr. H.N. Phien, Dr. Apichart Anukulampai. (Supported by the Office of the Prime Minister, RTG).

Energy Technology

Evaluation and Selection of Ligno-Cellulose Wastes which can be Upgraded into Substitute Fuels (Phase I)

A theoretical study and an experimental investigation of ligno-cellulose combustibles are included in this project, with the theoretical study covering both qualitative and quantitative analyses of the nature of combustibles, their origin, forms and qualities; and the production, marketing and utilization of fuelwood, charcoal and briquettes from saw dust and other wastes in Thailand.

The study reveals variations in the production and marketing of fuelwood and charcoal in the various regions of Thailand, depending on the availability of the source and its distance from the market. Fuelwood and charcoal are mostly used in the household sector for cooking purposes, while very small amounts are used in the commercial and industrial sectors. Densification of agricultural residues, especially rice husk and saw dust, is technically well established in Thailand, but the economics of briquette-making does not compare favorably with prices at which traditional fuels can be bought. Therefore densified fuels are facing difficulty in market penetration.

Briquetting rice husk by extrusion machine

The experimental investigation, covering the briquetting of rice husk, saw dust and water hyacinth, and a study of their different characteristics, looks into the evaluation and selection of efficient densifiers, the modification of commercially available densifiers for particular raw materials, and the design and test of suitable densifiers, if necessary.

Principal Investigators: Prof. G.Y. Saunier, Dr. S.C. Bhattacharya, Dr. M.S. Islam, Mr. N. Shah, Mr. R. Bhatia. (Supported by EEC).

Village-Size Solar Ice Maker

In the mid-1970s, AIT's initial experiments in solar powered intermittent absorption refrigerators were on the development of a small unit of the icy-ball design in which ammonia was distilled from solution in a flat-plate solar collector about 1.5 m^2 in area. About 6 kg. of ice could be made per day by evaporating the distilled ammonia to produce cooling at night.

Later experiments starting in 1979 involved a larger unit having two solar panels, each 2.5 m^2 in area. With this unit, over 25 kg. of ice could be made after a bright day.

More recently, a village size unit having twelve panels (each 2 m^2 in area) has been constructed and tested.

Solar absorption refrigerator at AIT

The solar collector panels have a selective surface on the black plates, made by covering them with commercially available adhesive sheets. A ferrocement water tank is used to cool the condenser, and a freezing unit with a capacity for making 100 kg. of ice is attached to the system.

Use of the system requires very little skill. The insulating panels under the solar collectors are opened in the evening and closed the following morning. The system is now almost ready for field testing and eventual commercial development. One of the tasks in this work will be to simplify construction as much as possible so that it can be made with a minimum of special parts in developing countries, where it might be used in remote places which have plenty of sunshine, but have no easy access to fuel or electricity.

Principal Investigators: Prof. Exell, Mr. Sommai Kornsakoo. (Supported by ODA, UK).

Environmental Engineering

Guidelines for Management Information System (MIS) for Water Supply Organization

The need for a good management-oriented information system (MIS) to support the day to day operation, decision-making requirements and planning needs of new water supply projects, has become more pronounced as construction of these large projects accelerates during the on-going decade for International Drinking Water Supply and Sanitation (1981-90).

Under the DANIDA-assisted WHO Project on developing MIS for water supply organizations, two pilot studies have already been conducted - one in Indonesia and another in Thailand. Although experiences gained from these two pilot studies have been of great benefit to other water authorities, the need remains for additional guidelines for the selection of appropriate computerized MIS for water supply organizations. Computerized MIS for Water Supply Organization—Guidelines for Selection, a document resulting from this project, answers this need.

Principal Investigators, Dr. B.N. Lohani, Dr. Kanchit Malaivongs. (Supported by WHO).

Geotechnical and Transportation Engineering

Measurement and Monitoring of the Level of Vibration at Three Historical Sites in Lopburi Province Due to Railway and Highway Traffic

Investigation of the effects of railway and highway traffic vibrations on the Khmer style temples of Prang Sam Yod, Prang Khaek and Wat Phra Si Ratana Mahathat in Lopburi Province, Thailand, has been undertaken in several tasks, as follows:

ng Sam Yod,
ng Khaek and
t Phra Si Ratana
hathat, three ancient
odas in Lopburi,
iland

Task 1. Reconnaissance study on the three historical sites to assess the actual problem, seek critical points where vibrations can be measured and survey the sources of vibration.

Task 2. Measurements of the levels of vibrations. Field measurements of the ground and structure vibrations due to traffic have been made at several locations determined in Task 1, in each of the three sites.

Task 3. Analysis of data and preparation of final report.

Principal Investigators: Dr. D. Bergado, Dr. Y. Yamada, Dr. S. Chandra. (Supported by the Fine Arts Department, Bangkok, Thailand).

Human Settlements Development

Monitoring the Implementation of Agricultural Production Promotion Projects in Self-Help Land Settlements, Thailand

The usual practice of evaluating development projects only after implementation has been completed prevents planners and project managers from correcting or modifying a project's implementation in accordance with the actual dynamics of its context. This limitation of single event evaluation has led to the emergence of an alternative called continuous interval monitoring which enables more flexible and appropriate steering of development projects.

Such monitoring was undertaken by the Human Settlements Development Division at the request of the Thai-German Land Settlements Promotion Project (TG-LPP) of the Self-Help Land Settlements Division, Department of Public Welfare, Ministry of Interior, Royal Thai Government. The monitoring aimed at (a) establishing a procedure for monitoring data by means of a specifically modified FMDCAS package program, with

immediate feedback of findings into project implementation; (b) demonstrating the contribution of such monitoring to the direct material benefit of farmers involved, and thus reduce risks in implementing the aforementioned production promotion projects; and (c) creating a time-series data base for social and economic research. The period covered by baseline surveys first and by monitoring subsequently extended from March 1979 until July 1984.

Production promotion projects of Phase III (1979–1982) of the Thai-German Land Settlements Promotion Project (TG-LPP) monitored were implemented in the Self-Help Land Settlements at Kiulom, Amphoe Muang, Lampang Province; at Khuan Phumiphon, Amphoe Doi Tao, Chiengmai Province, and at Lamnamnan, Amphoe Thapla, Uttaradit Province, all of which are located in Northern Thailand.

The findings of monitoring Phase III are presented through Research Reports Nos. 1 to 8 on the Baseline Survey, the First and Second Monitoring Surveys, the Research Design and Survey Organization, the Synopsis and Summary of pertinent demographic characteristics, social status, attitudes and perceptions of the sampled settlers obtained by means of the so-called "Human Resources Surveys". It was established that the projects implemented and monitored at the Self-Help Land Settlement at Kiulom in Lampang Province had made good progress and thus no longer needed to be monitored.

Before completion of this research, a follow-up project was commissioned that is not a mere continuation of the former because of a distinctly new technique to be employed in monitoring and a topographical shift. Though the purposes remained largely identical, the additional task was to test and make operational a newly developed software for application on micro-computers. This change entailed substantial modifications of the survey format. Projects were henceforth monitored in the Self-Help Land Settlements of Khuan Phumiphon and of Lamnamnan, and newly added was the Self-Help Land Settlement of Lamdomnoi, Amphoe Phibun Mangsahan and Amphoe Khong Chiam, Ubon Ratchathani Province in Northeastern Thailand during Phase IV (1983–1984) of the said project.

In continuation of the report series, Research Reports Nos. 9 to 13 include a Farm Management Survey Manual, Monitoring Surveys on Khuan Phumiphon and Lamnamnan Self-Help Land Settlement Baseline and Monitoring Surveys on Lamdomnoi Self-Help Land Settlement and a concluding Summary Report that presents the accumulated experience in testing the software, hardware, and survey techniques employed and detailed specific recommendations on monitoring.

Map of area covered in the monitoring of Thai-German Land Settlements Promotion Projects

Principal Investigator: Prof. K.E. Weber (Supported by TG/LPP/GTZ).

Conservation and Development Planning for Phuket Town Center, South Thailand

The precious historical past of the thriving town of Phuket is most apparent in the various architectural styles of the old Chinese shophouses in the commercial center around Tha Lang Road and Soi Rommanee. These buildings, which reflect Chinese, Colonial and European-Indian influences and are generically related to those in Penang, which used to have strong trading links with Phuket, have been gradually deteriorating over the years. In addition, the rapid economic growth of Phuket, resulting from the tourism and tin mining booms, has led to the demolition or inappropriate renovation of some of the shophouses. Thus, with a few exceptions, many of the new or renovated buildings clash with Phuket's traditional architectural environment. Heavy traffic has also endangered the survival of the old town.

Town center of Phuket

Tension test of "Hambo" elastic rail fastenings

This review of existing plans and studies for Phuket with particular emphasis on the conservation theme is a prelude to establishing and implementing a policy of "conservation with development" for Phuket, in observance of the town's 200-year anniversary. The review, submitted in the Thai language in July 1984, includes an opinion survey among leading representatives of the public and private sector; explores the possibility of implementing a conservation program through close cooperation between the government and the private sector; calls for a strong legal base and local bye-laws; analyzes in detail a potential pilot project area; and proposes a framework for policy and implementation besides an immediate action program. Conditions for a gradual approach towards the

pilot project are promising, and as soon as the pilot project proves successful, wider areas of the town can become part of Phuket's "conservation with development" policy.

Principal Investigator: Mr. H.D. Kammeier, (Supported by GTZ/Tourism Authority of Thailand).

Structural Engineering and Construction

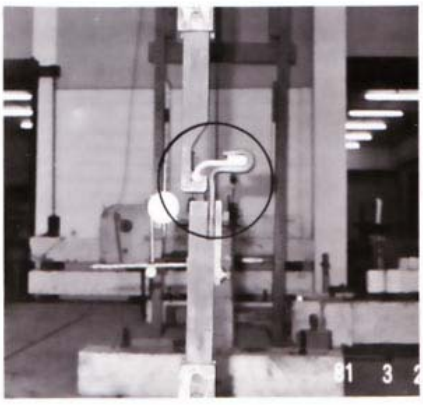
Inspection and Tests of "Hambo" Elastic Rail Fastenings

At the request of the State Railway of Thailand (SRT), "Hambo" elastic rail fastenings, a new method of attaching rails to monolithic prestressed concrete sleepers, have been inspected and tested for their mechanical properties. The inspection and tests, undertaken in accordance with the "Technical Specifications for the Supply of Monolithic Prestressed Concrete Sleepers with Hambo Elastic Rail Fastenings – 1982", have been witnessed by authorized inspecting engineers from SRT. The four types of tests, carried out on randomly picked samples, are as follows:

Type I – Dimensional Tolerance (30 specimens of shoulders made by steel forging were measured to determine their conformity to specified dimensions and allowable tolerances);

Type II – Hardness Test (30 specimens of shoulders were tested for their resistance to abrasion and wear);

Type III – Tension Test (15 specimens of shoulders and clips were tested by direct tension to determine their elastic strength and their capability to sustain a specified extension of 11.5 mm); and



Type IV – Fatigue Test (two specimens were tested for their resistance to fracture under five million cycles of loading at a specified level and frequency).

A report submitted to SRT at the end of the month-long project shows that test results have satisfied the required specifications. This project demonstrates the usefulness of the basic testing equipment in the SEC Division's laboratory in contributing to the safe and economic operation of state enterprises and industrial organizations.

Principal Investigators: Prof. Pisidhi Karasudhi, Dr. Pichai Nimityongskul, Mr. Chalat Choeypunt. (Supported by SRT).

Water Resources Engineering

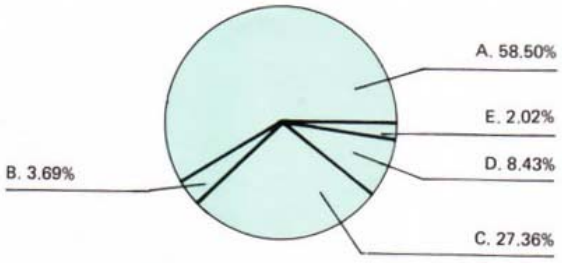
Flood Routing and Control Alternatives of Chao Phraya River for Bangkok

(See RRDC write up on page 18).

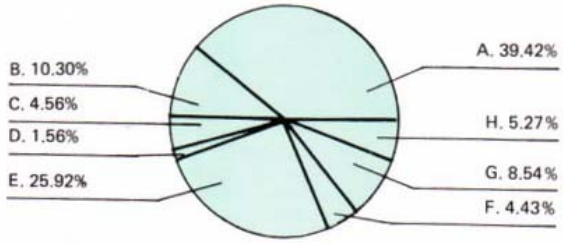
DONOR RELATIONS

AIT has been described as a model in international cooperation. Countries as geographically far apart as those in the developed West and in the the developing region of Asia have been the Institute's long-term supporters.

Type of Donor
A. Governments
B. International Organizations
C. Foundations
D. National Government Agencies
E. Business, Private and Others



1983–84 PERCENTAGE CONTRIBUTION BY TYPE OF DONOR



1983–84 TOTAL CONTRIBUTION BY TYPE OF GRANT

During the fiscal year 1983-1984, 21 governments, 15 international organizations, six foundations, 14 national government agencies and 22 business enterprises or a total of 78 donors made a total contribution of US$14,626,460 in cash and in kind. The grants came in eight different forms and are summarized below.

Type of Grant	In Cash	In Kind	Percentage
A. Scholarships	5,765,497		39.42
B. Research Projects	1,505,983		10.30
C. Continuing Education Activities	667,346		4.56
D. Capital Grants/ Buildings	228,772		1.56
E. Equipment	318,634	3,472,692	25.92
F. Operating Grant	647,458		4.43
G. Secondment of Faculty and Senior Administrative and Research Staff	98,418	1,150,315	8.54
H. Local Funds/Others	771,345		5.27
TOTAL US$	10,003,453	4,623,007	100

Campus Development

Energy Technology Building II: Expanding the Institute's Capacity for Energy Research

Completed in October 1984, Energy Technology Building II was opened on January 24, 1985 by H.E. Mr. Andre Arnaud, the Ambassador of the Republic of France. Built at a cost of US$311,400 with funds donated by the Government of France, ET Building II has a 600 sq.m. covered, naturally ventilated working area on the ground floor, which is arranged to accommodate both work and research activities and is partially screened by a sloped lawn. The second floor plan echoes that of ET Building I. It contains nine faculty offices, two seminar rooms adjacent to a conference room which can accommodate 100 persons, a coffee lounge, a small laboratory and two rooms for research associates. A passarelle connects ET I and ET II Buildings.

ET Building I was built in 1981. Both buildings, designed by the noted Thai architect, Dr. Sumet Jumsai, match each other beautifully while also complementing the adjacent Energy Research Park, a complex for study and research activities presented by the Government of France in 1980. Research activities conducted on the park include the measurement and characterization of the performance of flat plate and concentrating solar collectors and photovoltaic devices. Applications of solar energy to drying and refrigeration and the preparation and combustion of biomass fuels are studied.

The Newly-Opened Extension of the Regional Experimental Center: A Recent Addition to AIT's Expanding Research Facilities

On April 30, 1984, the extension of the Regional Experimental Center was officially opened, marking the further expansion of research facilities and capabilities at the Institute.

Dr. Chen Fu-Koo, Chairman of the Taiwan Cement Corporation and a member of the AIT Board of Trustees, presided at the opening ceremony.

The extension has been built at a cost of US$494,060, from funds donated by the Republic of China. It contains laboratory structures comparable in scale and character to those in the original unit. The newly-constructed building consists of the extension northward of the umbrella roof structure and ground floor slab and an adjacent laboratory/office block of 260 square meters. The extension houses a food processing laboratory and a soil physics laboratory, as well as a number of offices for research projects.

The first unit of the center, also donated by the Republic of China, was inaugurated on January 23, 1975. It has since been the site for a wide range of laboratory research and pilot projects, including the testing of soil and water quality, the development and modification of agricultural machinery, and the scale model investigation of water structures.

The principal users of the center are the Divisions of Water Resources Engineering, Agricultural and Food Engineering, and Environmental Engineering.

Above left and left : ET Buildings II and I, respectively. Above: The new extension of the Regional Experimental Center.

Summary of Donations Received in Cash and Kind FY 1983-84 (%)

GOVERNMENTS

Australia (9.35)
Austria (0.01)
Bangladesh (0.08)
Belgium (0.90)
Canada (3.78)
China, Republic of (2.79)
Denmark (1.38)
France (2.52)
Germany, Federal Republic of (11.37)
India (0.64)
Italy (0.10)
Japan (7.25)
Nepal (0.24)
Netherlands (1.84)
New Zealand (0.42)
Norway (0.55)
Sri Lanka (0.03)
Switzerland (0.71)
Thailand (7.98)
United Kingdom (1.15)
United States of America (5.41)

Sub-total 58.50

INTERNATIONAL ORGANIZATIONS

Asian Development Bank (0.11)
Center for World Food Studies, Netherlands (0.06)
EEC (1.59)
ESCAP (0.16)
FAO (0.06)
IADS (0.11)
IBRD (World Bank) (0.21)
IIE, USA (0.02)
IRRI (0.01)
ISS, Netherlands (0.22)
Mekong Secretariat (0.08)
UNDP (0.68)
UNESCO (0.12)
WHO (0.22)
WMO (0.04)

Sub-total 3.69

FOUNDATIONS

AIT Foundation Inc./IBM-AFE (26.23)
AIT UK Appeal Fund/Shell International (0.22)
IDRC (0.43)
KEIDANREN, Japan (0.16)
Lee Foundation (0.25)
Rockefeller Foundation (0.07)

Sub-total 27.36

NATIONAL GOVERNMENT AGENCIES

Bank of Thailand (0.04)
DTEC, Thailand (0.23)
EGAT, Thailand (0.13)
Express and Rapid Transit Authority of Thailand (0.01)
Fine Arts Dept., Thailand (0.01)
Hasanuddin University, Indonesia (0.03)
NESDB, Thailand (4.83)
National Education Commission, Thailand (0.11)
National Irrigation Administration, Philippines (0.26)
Prime Minister's Office, Thailand (1.36)
RID, Thailand (1.21)
Royal Thai Air Force, Thailand (0.13)
Royal Thai Army, Thailand (0.02)
Supreme Command Headquarters, Thailand (0.06)

Sub-total 8.43

BUSINESS, PRIVATE AND OTHERS

AIT Alumni Association, Thailand (0.04)

BES Engineering Corp., ROC (0.21)

Chinese Petroleum Corp., ROC (0.21)

China Technical Consultants, Inc., ROC (0.21)

Concrete Products and Aggregate Co., Ltd., Thailand (0.05)

Motor Columbus Consulting Engineering, Switzerland (0.06)

Mocks Consult GmbH, Germany (0.01)

Philips Electrical Co., Thailand (0.10)

Marden Family, Hong Kong (0.11)

Regional Engineering Consultants Co., Ltd., Thailand (0.02)

Resources Management Int'l, Inc., Indonesia (0.04)

RET-SER Engg. Agency, ROC (0.11)

Salzgitter Consult Gmbh, Germany (0.03)

Shell International, UK (0.05)

Siam Cement Co., Ltd., Thailand (0.04)

Sindhu Pulsirivongs Ltd., Thailand (0.09)

United Engineering (Malaya) Ltd., Malaysia (0.02)

Taiwan Cement Corp., ROC (0.11)

Taiwan Power Co., ROC (0.21)

Thai Agency Engineering Co., Ltd., Thailand (0.01)

Thai Special Wire Co., Ltd., Thailand (0.01)

Wilbur Smith & Associate, Inc., USA (0.21)

Others (0.07)

Sub-total 2.02

Total Contributions Received in Cash and Kind

FY 1959–60 to FY 1983–84

Governments	**78.36 %**
Australia	5.50
Austria	0.03
Bangladesh	0.04
Belgium	0.89
Canada	5.46
China, Republic of	3.72
Denmark	1.22
France	1.80
Germany, Federal Republic of	7.85
India	0.18
Indonesia	0.08
Israel	0.07
Italy	0.22
Japan	11.61
Korea, Republic of	0.37
Nepal	0.03
Netherlands	2.95
New Zealand	1.01
Norway	0.77
Pakistan	0.10
Philippines	0.26
Sri Lanka	0.01
Sweden	0.05
Switzerland	0.68
Thailand	12.37
United Kingdom	5.52
United States of America	15.56
Vietnam	0.01
International Organizations	**2.10**
Foundations	**10.31**
National Government Agencies	**5.82**
Business, Industries, Private & Others	**3.41**

Details of Donor Support During 1983-84

GOVERNMENTS

The Government of Australia as part of its triennial grant for the period 1983-1985 made a cash grant of US$ 1,185,645 for scholarships and for documentation activities, in addition to 98 man/months of faculty and staff secondment.

The **Republic of Austria** provided 1 man/month of faculty secondment.

The **Government of Bangladesh** made an additional grant of Taka 250,000 as local fund for academic and related activities of AIT faculty and staff in Bangladesh.

The **Royal Government of Belgium** contributed US$85,859 for scholarship and 28 man/months of faculty secondment. A new Memorandum of Understanding (MOU), covering the period 1 January 1984 to 31 December 1986, provides for four faculty members for a period of three years each in Industrial System Engineering, Production Engineering, Industrial Economics and Human Settlements Development; three short-term experts for a period of 5-6 weeks each; six scholarships per year or a total of 18 scholarships; and workshops in the areas of energy conservation and agro-industries.

The **Government of Canada** made a total contribution of US$508,346 under the present Memorandum of Understanding for scholarships, research projects, continuing education activities, and faculty and staff support.

The **Republic of China** made a cash grant of US$356,000 for scholarships, in addition to 22 man/months of faculty secondment.

The **Royal Government of Denmark** contributed US$155,000 for scholarships and 24 man/months of faculty secondment.

The **Republic of France** made a total cash grant of US$254,238 for scholarships, research projects, continuing education activities, faculty and staff support. In addition, 69 man/months of faculty and staff secondment were provided.

Signing of Belgian Government MOU by H.E. Mr. F.X. de Donnea, Belgian Secretary of State for Development Cooperation and H.E. Pierre Brancart, the Belgian Ambassador.

Inauguration of the Regional Experimental Center by Mr. Chen-Fu Koo, AIT Trustee and Chairman of the Taiwan Cement Corporation, ROC.

Inauguration of ET Building II presided over by H.E. Mr. Andre Arnaud (right), the French Ambassador.

The **Government of the Federal Republic of Germany** through its agencies CDG, DAAD, GTZ and DSE made a total cash grant of US$1,662,381 for scholarships, research projects, continuing education activities and capital costs. In addition, 70 man/months of faculty and staff secondment were provided.

The **Government of India** contributed books and equipment worth US$32,317, and a cash grant of Rs 197,877.22 to support the Institute's academic related activities in India. In addition, 23 man/months of short-term secondment of faculty were provided.

The **Government of Italy** provided 11 man/months of faculty secondment. Under consideration is a proposal covering scholarships, equipment and faculty secondment, for which appropriate funding mechanisms are being explored by the Government of Italy with UNDP.

The **Government of Japan** made a total cash grant of US$916,540 for scholarships, equipment and operating costs, in addition to 80 man/months of faculty secondment.

The **Royal Nepalese Government** contributed NRs500,000 as local fund for AIT's academic related activities in Nepal.

The **Royal Netherlands Government** presented a cash grant of US$231,339 for scholarships and the acquisition of books, and equipment worth US$ 10,620. In addition, 12 man/months of faculty secondment were provided.

As part of its triennial grant the **Government of New Zealand** contributed US$61,185 for scholarships and for the activities of the International Ferrocement Information Center.

The **Royal Norwegian Government** made a cash grant of US$77,500 for scholarships. NORAD's evaluation of a proposed project, "Strengthening the Computer Education and Computer Capability of the Asian Institute of Technology", has been submitted to the Government of Norway for implementation.

The **Government of Sri Lanka** provided another grant of Rs92,974.45 as local fund for academic and related activities of AIT faculty, staff and students in Sri Lanka.

Donor countries' presentations through their Ambassadors to Thailand. Above, from top to bottom: H.E. Dr. H.C. Lankes (Germany); H.E. Mr. M. Tachibana (Japan); and H.E. Mr. Peter M. Motzfeldt (Norway).

Above, from top to bottom: H.E. Mr. A.G. Asrani (India); Mr. H.R. van der Valk, Counsellor for Development of the Royal Netherlands Embassy; and H.E. Mr. John Gunther Dean (United States).

The **Government of Switzerland** contributed US$81,105 for scholarships. Twelve man/months of faculty secondment were also provided.

The **Royal Thai Government** contributed US$1,167,271 for scholarships, construction, operating costs and as tax reimbursement.

The **Government of the United Kingdom** made a total grant of US$ 68,645 for research projects and the acquisition of books, in addition to 63 man/months of faculty secondment.

The **Government of the United States of America** provided a cash grant of US$791,574 for scholarships, research projects, continuing education activities, equipment purchase and faculty support. A total of 72 man/months of faculty secondment were also provided.

In June 1984, an additional scholarship grant of US$1 million for ASEAN nationals brought the existing US/ASEAN/AIT Scholarship and Research Program to a total of US$4.125 million.

Note: Contributions from the Republic of Korea, Indonesia and the Philippines were received after June 30, 1984. These will be reported in the 1984-85 Annual Report.

INTERNATIONAL ORGANIZATIONS

1. The following international organizations namely, the ADB, ESCAP, FAO, IIE (USA), ISS (the Netherlands), IADS, IRRI, UNESCO, UNDP, WHO, WMO, the Mekong Secretariat and the World Bank made a total contribution of US$303,361 for scholarships, research projects and continuing education activities. In addition, the Center for World Food Studies of the Netherlands provided 4.5 man/months of faculty secondment.
2. EEC provided a total grant of US$ 202,568 for scholarships, research projects, and continuing education activities, in addition to 24 man/months of faculty secondment.

FOUNDATIONS

1. The AIT Foundation, Inc. made grants totalling US$426,750, itemized as follows: US$411,250 from IBM Americas/Far East Crop. and US$15,500 from the Starr Foundation.
2. The AIT-UK Appeal Fund presented a grant of US$32,500 solicited from Shell International Petroleum Co. Ltd., to support one faculty member in the Energy Technology Division.
3. IDRC of Canada contributed US$ 62,326 for scholarships, research projects, and continuing education activities.
4. KEIDANREN of Japan provided US$24,000 for scholarships.
5. The Lee Foundation of Singapore made a scholarship grant of US$ 36,056.
6. The Rockefeller Foundation supported 8.5 man/months of faculty secondment.

Donor countries' presentations through their Ambassadors to Thailand. Above and above right: H.E. Mr. Tae Woong Kwon (Republic of Korea) and H.E. Air Marshal Soebambang (Indonesia). Right: EEC scholarship awards by Mr. John Hansen, Head of Delegation of the Commission of European Communities for Southeast Asia, and Mr. M. Carpentier, an official from the EEC Headquarters in Brussels (center and right, respectively).

NATIONAL GOVERNMENT AGENCIES

Fourteen national government agencies from the Governments of Thailand, the Philippines, Indonesia, and the Republic of China provided assistance worth a total of US$1,263,536 for scholarships, sponsored research projects and continuing education activities.

BUSINESS AND INDUSTRIES

Twenty-two business enterprises in the Republic of China, the United States, Switzerland, the Federal Republic of Germany, the United Kingdom, Malaysia and Thailand contributed US$ 268,776 to support scholarships, research projects, continuing education activities, equipment purchase and faculty secondment.

PRIVATE AND OTHERS

1. The AIT Alumni Association Thailand contributed US$5,286 as in kind support.
2. The Marden Family in Hong Kong provided a grant of US$15,500 for the scholarship program.
3. The Secretariat of the Technology for the People Fair contributed US$3,450 to support AIT's participation in its Third International Technology Fair, held in Manila in November 1983.

ALUMNI RELATIONS

A ROYAL ALUMNA

Her Royal Highness Princess Maha Chakri Sirindhorn of Thailand became AIT's first Royal alumna when she received her certificate of course completion from the Asian Regional Remote Sensing Training Center (ARRSTC) on August 8, 1984.

As part of her two-month training at ARRSTC, Princess Sirindhorn developed a land use analysis project for certain areas in southern Thailand, using remote sensing technology.

Princess Sirindhorn's concern for the sustainable development of Thailand's natural resources, an interest shared by the Royal Family, was her primary motivation for attending the ARRSTC program.

During her stay at AIT, Princess Sirindhorn was also awarded a life membership in the Institute's Student Union, marking the second time that this honorary award has been presented since the Institute's establishment in 1959. Its only other recipient is former AIT President, Dr. Robert Banks.

HRH Princess Maha Chakri Sirindhorn (left) with the 1984 officers of the AIT Student Union.

REPORT OF THE AITAA

The Fourteenth Meeting of the AITAA Governing Board, held at the AIT Center on January 11-12, 1985, was attended by the members of the Executive Committee and representatives from AITAA chapters in Brunei, Hong Kong/ Macao, Japan, Korea, Malaysia, Nepal, the Philippines, the Republic of China, Singapore and Thailand.

Highlights of the meeting are as follows:

- **AIT TRIENNIAL PLAN**

Presenting the AIT Triennial Plan to the Governing Board, AIT President Alastair North emphasized that its three-pronged concerns on classical infrastructure engineering, applied technologies, and the management and planning of these technologies remain consistent with AIT's main objective of supporting regional development. Reacting to the Triennial Plan, the alumni representatives expressed the need for a feasibility study to determine the "viability of new ventures that will be undertaken."

- **AITAA SUPPORT TO THE INSTITUTE**

Exploring new opportunities for support to the Institute, the meeting agreed that in lieu of a placement service for AIT alumni, the 14 AITAA chapters will extend placement assistance to their respective members.

A total collection of US$10,323 by the AITAA Scholarship Fund Raising Committee was also reported at the meeting.

- **AITAA PROPOSALS TO MAINTAIN AIT'S HIGH ACADEMIC STANDARD**

The Governing Board reiterated AITAA's recommendations on ways to help ensure AIT's high academic standard, as follows: that degree requirements for Master's and Diploma programs, including a required minimum grade point average of 2.75 for either program, should be the same; and that the transfer of programs by students should be limited to a move from a Diploma to a Master's program only, and not vice-versa. These recommendations were first proposed at the 13th meeting of the Governing Board in 1983.

The Governing Board also encouraged AITAA members' assistance in identifying and recruiting outstanding graduates for AIT.

ALUMNI IN THE NEWS

THAI NATIONAL COUNCIL AWARD

Dr. Suchint Phanapavudhikul, a 1967 graduate from the Division of Public Health (now Environmental) Engineering,

was awarded the "Invention Work Prize" by the National Research Council of Thailand for his research on "Slop Waste Treatment from Distillery Plant by Appropriate Technology". Dr. Suchint's research focuses on the utilization and recycling of waste to recover its nutrients and return them to the soil. It also promotes effective pollution control.

The prize-winning research covers the full scale operation of five distillery plants in rural areas from 1979-1984.

Dr. Suchint Phanapavudhikul receiving his award from the Thai Prime Minister, H.E. General Prem Tinsulanonda.

JAYCEES INTERNATIONAL AWARD

One of the ten recipients of Jaycees International's Outstanding Young Persons of the World for 1983 is AIT alumnus, Mr. Pao Ping-Wing, a 1980 graduate from the Human Settlements Development Division. The international award, held by Jaycees International for the first time, also honored nine other outstanding young persons from the United States, Colombia, India, the Republic of China, Belgium and Sri Lanka.

Mr. Ping-Wing's award comes after his selection by the Hong Kong Jaycees as one of the Ten Outstanding Young Persons of Hong Kong for 1982. A noted civic and community leader in the Crown Colony, Mr. Ping-Wing is one of the youngest members of the Urban Council of Hong Kong. He is also the founder, chairman and chief advocate of the People's Coalition for Control of Companies with Monopoly Rights. For the last 20 years he has been an active senior member of the Scout Association of Hong Kong and currently serves as its youngest regional training commissioner.

Mr. Ping-Wing's involvement with social work started in 1972 when he joined the Society of Community Organizations (SoCO) of Hong Kong as a community organizer trainee. In 1974 he was appointed as Director of the society.

Mr. Ping-Wing has received many awards and honors. He received the Distinction Award for the Royal Life Saving Society of the United Kingdom in 1969, the Distinguished Service Award and the Long Service Award of the Scout Association of Hong Kong in February 1978.

Mr. Pao Ping-Wing

AWARDS FROM THE ASIA-PACIFIC DIVISION OF THE INTERNATIONAL ASSOCIATION FOR HYDRAULICS RESEARCH

The two most outstanding papers selected by the Fourth Congress of the Asian and Pacific Regional Division (APD) of the International Association for Hydraulics Research (IAHR), held in Chiang Mai, Thailand from September 11-13, 1984, have been co-authored by three AIT Alumni. They are as follows:

Dr. H.N. Phien, an Associate Professor in the Division of Computer Applications, and Mr. T. Jivajirajah, a graduate from the Water Resources Engineering Division; for their joint paper, "The Transformed Gamma Distribution for Annual Stream-Flow Frequency Analysis". Dr. Phien obtained his D.Sc. from AIT.

Mr. A.M. Salhotra, a Ph.D. candidate at the Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A. and holder of a Master's degree from the Division of Water Resources Engineering; for his joint paper, "Evaporation and Stratification Study for the Dead Sea," co-authored with Dr. E.E. Adams, and Prof. D.R.F. Harleman.

The APD-IAHR award is made at each biennial IAHR regional congress to the two most outstanding papers—one from the host country and another from one other participating country.

Dr. H.H. Phien

ESTABLISHMENT OF AGSHA

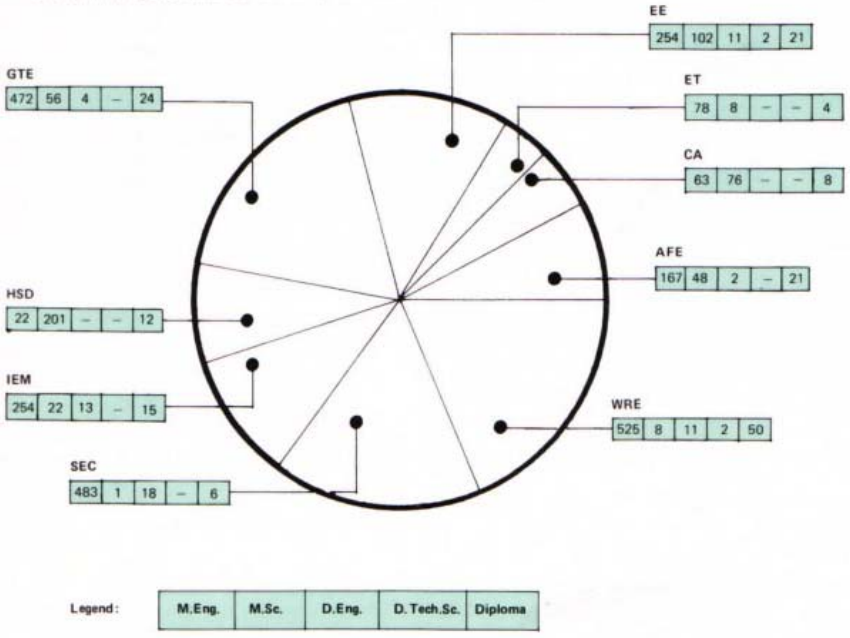
The AIT-German Scholarship Holders Association (AGSHA) was formally established in January 1984 to foster the exchange of information and experience in the various professions among all recipients of CDG scholarships and other German fellowships. The CDG Alumni Office at AIT will serve as a focal point for all AGSHA members, to facilitate the objectives of the association and to act as a catalyst for its development projects.

AGSHA will complement the work of two other alumni associations namely, the AIT Alumni Association and all its chapters, and the CDG Returnee Organization. Links with these two associations are expected to further strengthen the goals and objectives of AGSHA.

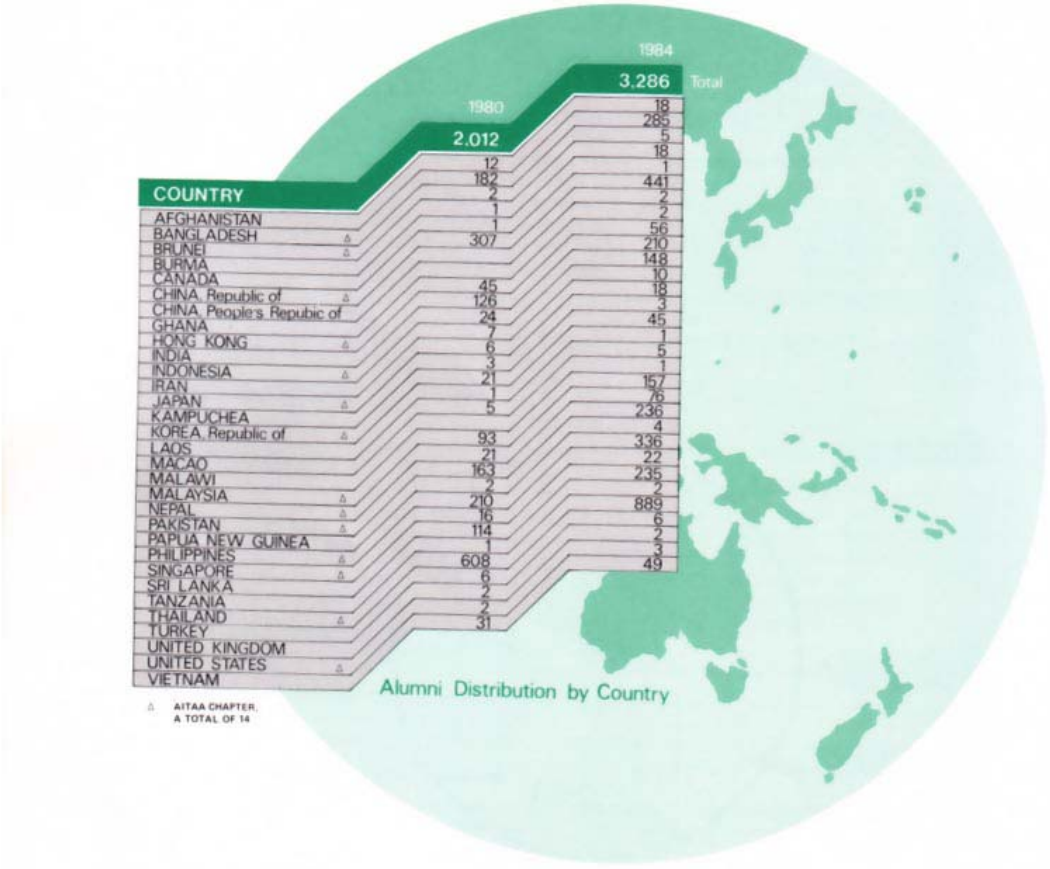
In addition to its present membership, comprised of past and present recipients of AIT-CDG scholarships, as well as the association's founding patrons and honorary members, AGSHA will launch a third category of corporate members by mid-1985. This will include organizations and industries which are interested in establishing professional contacts with AGSHA members for their expertise in research.

So far, AGSHA activities have been concentrated at AIT. These include the workshop on Technology Dissemination for Development, a regional activity held from November 5-10, 1984.

Alumni Distribution by Division



N.B. Chart excludes holders of degrees in Community and Regional Development, and System Engineering and Management which were discontinued in 1974.


1984
3,286
Total
1980
2,012
COUNTRY
AFGHANISTAN 12 18
BANGLADESH △ 182 285
BRUNEI △ 2 5
BURMA 1 18
CANADA 1 1
CHINA, Republic of △ 307 441
CHINA, People's Repubic of 2 4
GHANA 1 2
HONG KONG △ 45 56
INDIA 126 210
INDONESIA △ 24 148
IRAN 7 10
JAPAN △ 6 18
KAMPUCHEA 3 3
KOREA, Republic of △ 21 45
LAOS 1 1
MACAO 5 5
MALAWI 93 157
MALAYSIA △ 21 76
NEPAL △ 163 236
PAKISTAN △ 2 4
PAPUA NEW GUINEA 210 336
PHILIPPINES △ 16 22
SINGAPORE △ 114 235
SRI LANKA 1 2
TANZANIA 608 889
THAILAND △ 6 6
TURKEY 2 2
UNITED KINGDOM 2 3
UNITED STATES △ 31 49
VIETNAM
△ AITAA CHAPTER. A TOTAL OF 14
Alumni Distribution by Country

CENTRAL ADMINISTRATION

Central administration activities, with the exception of academic administration, are the responsibility of the Chief Administrative Officer. This position, until June 1984, has had the formal designation of Vice President for Administration. On the retirement of the then incumbent, Mr. K.R. Long, his replacement was designated Bursar. While this change has significantly identified the major administrative tasks in the financial management sense, the overall administrative role is so complex and wide-ranging that the Board of Trustees have notionally retained the position of Vice President for Administration within the establishment, subject to it not being filled whilst a Bursar is in post. One of the major responsibilities of the Bursar and Chief Administrative Officer, Mr. J.H. Bradridge, will be to review in 1985 the organizational structure of Administration and present recommendations as a result of such investigation.

Brief comments on the activities within the departments and units that report to the Bursar follow.

Accounts and Control

Comments on this department are included in the sub-section entitled Financial Management.

Administrative Data Processing Unit

This unit completed its third year of operations with five main subsystems and others in various stages, ranging from design to implementation.

Unfortunately, the accounting software installed in 1983, when tested with line data, proved unsuitable for existing accounting procedures, particularly, the Chart of Accounts.

The more important applications (other than accounting) in the proposed implementation schedule for data processing systems for the next three years are summarized, as follows:

- **Personnel Subsystem**

  The software for personnel subsystem (IBM-INTERPERS), first requested in 1982, was only available in its complete form in September 1984. An estimated nine-month period has been fixed for conversion/customization, testing, installation and maintenance. A computer-based system will replace existing procedures before the end of fiscal year 1984-85.

- **Professional Office System**

  The local area internal network of personal computers with PC-host links and display terminals will enable the introduction of electronic mail and office automation.

- **Physical Plant Applications**

  Physical Plant functions, such as motor pool management, stock and inventory control, work order processing and maintenance scheduling, will be computerized by the end of 1985.

- **Academic Administration**

  Academic administration functions await available software. A decision will be required to build in-house applications.

Administrative Services

This department is responsible for functions covering the following activities: cafeteria, government relations, purchasing, security, telephone and telex, and travel.

Starting in July 1984, personnel, a function formerly attached to this department, was placed under the responsibility of the Coordinator for Personnel who is also in charge of the operation of the Administrative Data Processing Unit.

Internal and external telephone services have caused concern for some time. The installation in December 1984 of a new PABX with an additional 20 external lines now ensures smooth telephone services.

Architectural Services (Capital Program)

The Project Architect is responsible for implementing the decisions of the Campus Planning Committee and for providing general architectural advice and service.

Major capital works completed during 1984 were the Regional Experimental Center (US$494,060) and the Energy Technology Building II (US$311,400).

A number of minor works were undertaken in 1984, including the establishment of additional carparks, and modifications and alterations to rooms and buildings.

The construction of the International Faculty/ Staff Housing, including four three-bedroom semi-detached houses, a block of 15 apartments, a covered carpark and a children's playground, is underway. The US$360,000-project is funded by the Royal Thai Government and completion by February 1985 is anticipated.

Under review are proposals for a new building for the Division of Agricultural and Food Engineering and the first phase of the Asian Development Park.

AIT continues to face the serious problem of subsidence. Although efforts to resolve this problem will be extremely costly, the matter is expected to receive considerable attention in 1985.

Auxiliary Services

Although the operations of this department continue to be satisfactory, the food service in the AIT Center began to show losses in mid-year, necessitating price increases and other cost effective measures. Increased conference activities should help improve financial returns.

Auxiliary Services also includes a wide range of service activities namely, the bookstore, post office, arcade shops, printing service, duty-free store and housing for staff and students. Its combination of functions will come under scrutiny in the general administrative review to be undertaken in 1985.

Internal Audit

The position of Internal Auditor, established in 1983 and consolidated with the nine-month secondment in 1983-84 of an Internal Audit Consultant to establish the function and audit programs was, regrettably, still vacant at year's end. However, job applications received have been short listed and an appointment is expected in early 1985.

Medical Service

The medical service (clinic) offers consultations for staff, faculty and students, and their families, as well as vaccination programs, family planning

education, facilities for x-ray and electro-cardiograph, and laboratory services. The clinic also provides a service to visitors, including short course students and seminar participants.
The increased consultation hours of the Medical Officer and the addition of one more registered nurse to the medical staff have enabled 24-hour medical services daily. Due to the growing student population and the number of staff housed on campus, the work will continue to increase.

Physical Plant

This department is responsible for providing almost all utility services to the campus, such as electricity, water supply, air-conditioning/refrigeration, telephone, telex, sewage, flood control, fire fighting equipment, etc. It assists students and faculty members in the construction, assembly, maintenance and repair of apparatuses, instruments, and equipment used in thesis and research work. The department is divided into nine sections namely, administration, air-conditioning/refrigeration, building maintenance, electrical, garage, grounds, 24-hour service, store and workshop.

The role of the Physical Plant Department in providing essential support services in a fully residential campus is specially important because of the Institute's isolation from the city proper. Apart from routine work, this department also contributes significantly to the Institute's energy conservation program and provides thoughtful detailed reports to management, based on statistical records.

The energy conservation program continued to be active during the year. Design changes were implemented in Energy Technology Building II and the air-conditioning system was modified to allow for the provision of three options, aimed at minimizing consumption and costs. Power factor studies throughout AIT resulted in the purchase of new equipment which should yield annual savings. Other potential improvements are planned. Those currently under study are heat loss in the Library Building and the after-office hours operation of the central chiller plant. Efforts by the Physical Plant to conserve energy and cut power costs drew appreciative comments at the annual meeting of the Board of Trustees.

The PABX installation in December 1984 was immediately followed by an increase in extension capacity from 360 to 500 with an additional 300 extensions available for the future.

A new 600 KW diesel generating set purchased this year has increased the previous capacity of only 195 KW, thus enabling the supply of electricity to the AIT Center, RCC, Library, central chiller plant, and street lighting, during blackouts.

The management of the AIT Center's conference complex, and the provision of living accommodation and recreational areas for staff and students are some major central administration activities.

Financial Management

The Accounts and Control Department is responsible for the recording and maintenance of all financial records of the Institute. Because of the unique nature of the funding processes that support the operations of AIT, the accounting system is based on the principles of Fund Accounting. Internal financial reports of AIT are based on the cash accounting system, but the annual audited accounts are accrued-based. Both points are briefly explained in the "Summary of Significant Accounting Policies" following the Auditor's Report.

Since 1967, the Institute's financial year has been established from July 1 to June 30. Additionally, although most of the Institute's money transactions are in Thai currency, its financial reports are traditionally converted to US dollars.

Although playing a significant role within Central Administration, the Accounts and Control Department is still operating on a manual accounting system. Investigations have begun into computerization and this will receive major attention in 1985, in conjunction with the Administrative Data Processing Unit.

ASSETS

CURRENT FUNDS

	US$
Unrestricted:	
Cash at banks	404,050.33
Investments, at cost	532,134.37
Advance duties and taxes (Note 2)	1,242,655.09
Other receivables	80,530.04
Deposits	8,333.57
Due from other funds	
– Restricted Current Funds	24,820.48
– Loan Funds	1,250.00
– Auxiliary Enterprise Funds	43,302.35
Restricted:	
Cash at banks	236,739.47
Investments, at cost	851,159.12
Accounts receivable and accrued income	51,069.21
Total Current Funds	3,476,044.03

LOAN FUNDS

Cash at bank	722.05
Accounts receivable	527.95
Total Loan Funds	1,250.00

ENDOWMENT FUNDS

Investments, at cost	1,098,280.04
Total Endowment Funds	1,098,280.04

GENERAL RESERVE

Cash at banks	184.64
Investments, at cost	3,143,767.44
Accrued income	57,278.63
Total General Reserve	3,201,230.71

AS AT JUNE 30, 1984

LIABILITIES AND FUND BALANCES

CURRENT FUNDS

	US$
Unrestricted:	
Accounts payable and accrued expenses	216,213.49
Deposits	15,004.42
Due to other funds	
– Current Funds Payroll	2.20
– Unexpended Plant Funds	410.13
Fund balances (Schedule 1)	2,105,445.99
Restricted:	
Accounts payable and accrued expenses	161,207.56
Due to other funds	
– Unrestricted Current Funds	24,820.48
– Auxiliary Enterprise Funds	738.55
Fund balances (Schedule 1)	952,201.21
Total Current Funds	3,476,044.03

LOAN FUNDS

Due to other funds	
– Unrestricted Current Funds	1,250.00
Total Loan Funds	1,250.00

ENDOWMENT FUNDS

Fund balances (Schedule 3)	1,098,280.04
Total Endowment Funds	1,098,280.04

GENERAL RESERVE

Fund balances (Schedule 4)	3,201,230.71
Total General Reserve	3,201,230.71

ASSETS

PLANT FUNDS

Unexpended:	
Cash at banks	330,937.80
Investments, at cost	590,131.49
Accounts receivable	12,033.55
Prepayments and deposits	159,973.05
Due from other funds:	
– Unrestricted Current Funds	410.13
– Auxiliary Enterprise Funds	60,000.00
– Maintenance and Construction Reserve	17,000.00
Maintenance and Construction Reserve:	
Cash at banks	5,593.14
Investments, at cost	95,436.08
Net Investment in Plant, at cost:	
Land development	628,374.58
Buildings	18,512,085.57
Furniture and equipment	9,965,980.45
Library acquisitions	1,645,630.45
Construction in progress	243,710.94
Total Plant Funds	32,267,297.23

AUXILIARY ENTERPRISE FUNDS

Cash at banks	65,833.71
Investments, at cost	35,048.07
Accounts receivable and accrued income	35,371.98
Deposits	65,962.06
Inventories	130,588.98
Due from other funds – Restricted Current Funds	738.55
Total Auxiliary Enterprise Funds	333,543.35

SPONSORED PROGRAM FUNDS

Cash on hand and at banks	96,724.26
Investments, at cost	47,487.58
Accounts receivable	13,480.08
Total Sponsored Program Funds	157,691.92

AGENCY FUNDS

Cash at banks	184,961.45
Investments, at cost	1,488,893.09
Accounts receivable	5,231.17
Total Agency Funds	1,679,085.71

LIABILITIES AND FUND BALANCES

PLANT FUNDS

Unexpended:		
Accounts payable and accrued expenses		17,313.82
Fund balances (Schedule 5)		
– Unallocated		569,558.67
– Allocated		429,430.48
Maintenance and Construction Reserve:		
Due to other funds		17,000.00
– Unexpended Plant Funds		84,029.22
Fund balances (Schedule 6)		
Net Investment in Plant:		
Fund balances (Schedule 7)		
– Allocated		31,149,965.04
Total Plant Funds		32,267,297.23

AUXILIARY ENTERPRISE FUNDS

Accounts payable and accrued expenses			53,676.08
Deposits			869.52
Due to other funds	– Unrestricted Current Funds		43,302.35
	– Unexpended Plant Funds		60,000.00
Fund balances (Schedule 8)			
Auxiliary services	– Unallocated	90,000.00	
	– Allocated	12,380.68	
	– Reserve	136,419.65	238,800.33
Academic related			
Continuing Education Center – Allocated			(63,104.93)
Total Auxiliary Enterprise Funds			333,543.35

SPONSORED PROGRAM FUNDS

Accounts payable and accrued expenses	1,811.44
Fund balances (Schedule 9)	155,880.48
Total Sponsored Program Funds	157,691.92

AGENCY FUNDS

Accounts payable and accrued expenses		360,436.85
Fund balances (Schedule 10)		
– Allocated	1,146,467.62	
– Unallocated	172,181.24	1,318,648.86
Total Agency Funds		1,679,085.71

Notes to the Financial Statements

June 30, 1984

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.

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 accounts 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 funds allocated to specific purposes by action of the governing board. Externally restricted funds may only be utilized in accordance with the purpose established by the source of such funds and are in contrast with unrestricted funds 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 funds, with the exception of general reserve fund and unexpended plant fund in which income is accounted for in the fund maintaining the investment.

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

c) Foreign currency translation: The books and accounts of the Institute are maintained in US dollars. At the balance sheet date assets and liabilities denominated in other currencies are translated into US dollars at approximate exchange rates ruling on that date. Revenues and expenditures are translated at approximate rates in effect during the year. Exchange gains and losses are included in income in the year.

d) Physical plant and equipment are stated at cost of 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. Commitments

At June 30, 1984 the Institute had outstanding commitments of approximately US$650,000 in respect of contracts for construction in progress at that date but not completed and outstanding purchase orders.

Auditor's Report to the Trustees of the Asian Institute of Technology

We have examined the accompanying balance sheet of the Asian Institute of Technology as at June 30, 1984 and the related statements of changes in fund balances and current funds revenues and expenditures for the year then ended. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the financial position of the Asian Institute of Technology at June 30, 1984 and the changes in fund balances and the current funds revenues and expenditures for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Price Waterhouse
Bangkok,
November 9, 1984

Financial Review

1. The balance sheet as certified by the Auditors has not been consolidated to show the overall AIT financial position. This can be done by eliminating all amounts owing to and from the funds to each other. This results in a total net asset and liability position of US$42,066,900. Most of this money is a build-up over 25 years of accumulated fund balances and is represented in Asset form by:

	US$
Cash	1,325,743
Investments	7,882,335
Debtors	1,498,174
Prepayments, Investments, etc.	364,869
Current Assets	11,071,121
Plant, Buildings, etc.	30,995,779
Total Net Assets	42,066,900

2. It has been normal practice in recent Annual Reports to list numerous figures relating to the cash operations of each fund. The format this year is changed. The objective is to show in summary form the total cash activity during the year.

US$'000

Fund	Receipts	Payments	Remarks
1. Unrestricted Current	5,067	4,721	346 Surplus
2. Restricted Current	1,964	1,919	45 Surplus
3. Loan	–	–	–
4. Sponsored Program	1,806	1,917	111 Excess (4)
5. Auxiliary Enterprise and	1,059	966	93 Surplus (5)
Continuing Education Center	387	477	(5)
6. Endowment	–	56	(6)
7. General Reserve	425	–	425 Surplus
8. Unexpended Plant	1,398	1,416	18 Excess
9. Maintenance and Construction Reserve	–	21	(9)
10. Agency	7,306	6,019	1,287 Surplus (10)

Notes

1. Unrestricted Current Funds are funds available for general operating purposes without restrictions imposed by outside agencies. This is the operating budget of AIT.
2. Restricted Current Funds are funds available subject to restrictions imposed either externally or internally, specifying the manner in which said funds are to be used in current operations.
3. Loan Funds are funds available for needy students to borrow for a short period.
4. Sponsored Program Funds are funds available subject to restrictions by donors or other agencies, as a condition of gifts, that they be used for research projects, conferences, seminars, short courses, or any other programs. The shortfall in 1983-84 was covered by accumulated funds from previous years.
5. Auxiliary Enterprise Funds are funds provided for operating auxiliary services, other campus services, and academic related services, in support of academic divisions and/or administrative departments with a non-profit making purpose. The surplus includes profit on Printing Service but ***note*** delayed payment for CEC operations.
6. Endowment Funds are funds which donors or other agencies have stipulated, as a condition of gifts, that the principal is to be maintained inviolate and in perpetuity, with only the income from the investments of the fund being expended. The amount spent in 1983-84 was merely a transfer to the Restricted Current Fund.
7. General Reserve is the fund which the Board of Trustees have stipulated shall be held in reserve for future use.
8. Unexpended Plant Funds are funds to be used for the acquisition of physical properties. The small excess expenditure in 1983-84 was funded from accumulated funds from previous years.
9. Maintenance and Construction Reserve was established in 1979 in order to provide funds for costs of maintenance and construction. The amount spent in 1983-84 reduced the balance at year's end to US$84,000.
10. Agency Funds are funds held in trust by the Institute on behalf of donors and other agencies.

A QUARTER CENTURY OF SERVICE TO ASIA'S DEVELOPMENT

The Asian Institute of Technology was established in 1959 as the SEATO Graduate School of Engineering and was located on a small site on the campus of Chulalongkorn University in Bangkok. In the early years of the Institute, academic programs were confined to the various branches of civil engineering. Course instruction began in September 1959 with Hydraulic Engineering. The addition of Coastal Engineering in 1968 resulted in the creation of the Division of Water Resources Engineering. Structural Engineering and Highway (now Transportation) Engineering were introduced in 1960. The first students in the Public Health Engineering Program (now the Division of Environmental Engineering) were enrolled in 1964.

In 1967, the Institute completely severed its relationship with SEATO. Under a decree provided by the Royal Thai Government, it became the Asian Institute of Technology and was awarded the status of an independent, autonomous, international institution with authority to award post graduate degrees and diplomas in engineering, applied science and related fields. In these formative years of its development, the Institute produced civil engineering graduates who have become successful professionals and have taken up positions of leadership in the region. In 1970, instruction in Environmental Engineering, Geotechnical Engineering and Management Engineering, began.

In 1973, the Institute moved to a new 150-hectare campus, provided by the Thai Government, at a site 40 kilometers north of Bangkok. With the vastly-increased space and resources made available by the new campus, the Institute quickly increased enrollment and expanded the scope of its academic programs. By 1975 the Institute had six academic divisions, representing major fields of study. Two additional divisions namely, Agricultural and Food Engineering and Human Settlements Development, were established in 1977 by expanding some of the already existing fields of study. In 1977 the Computer Applications Division admitted its first batch of students. The programs in Energy Technology began in 1980. Today the Institute teaches 600 students in nine divisions, and engages in other academic activities in six operational centers, as follows: Asian Regional Remote Sensing Training Center, English Language Center, Regional Computer Center, Library and Regional Documentation Center, Continuing Education Center, and Regional Research and Development Center.

His Majesty King Bhumibol Adulyadej of Thailand graciously presided and conferred degrees at the first graduation ceremony after completing the transition from the SEATO Graduate School of Engineering to the Asian Institute of Technology. Subsequent visits by His Majesty took place on February 14, 1973 when he inaugurated the Institute's new campus, and on May 7, 1975 when he graciously accepted the Honorary Degree of Doctor of Engineering.

Views of the Institute's scenic landscape at its present campus are shown on the opposite page. Above are the two logos signifying the Institute's transition to an independent, autonomous, international institution.

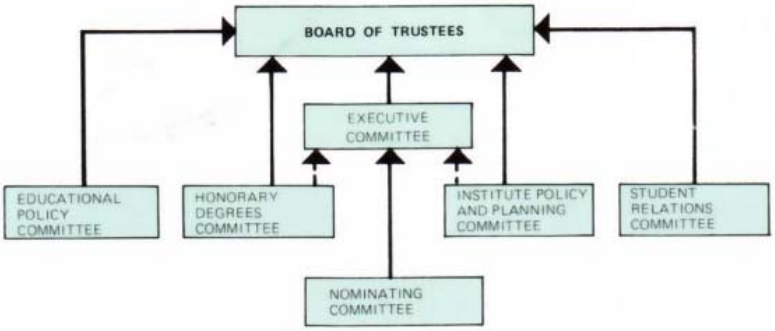
A 25th Anniversary Album

Anniversary Cocktail... Donors' Meeting... Family Day... Sportsfest...

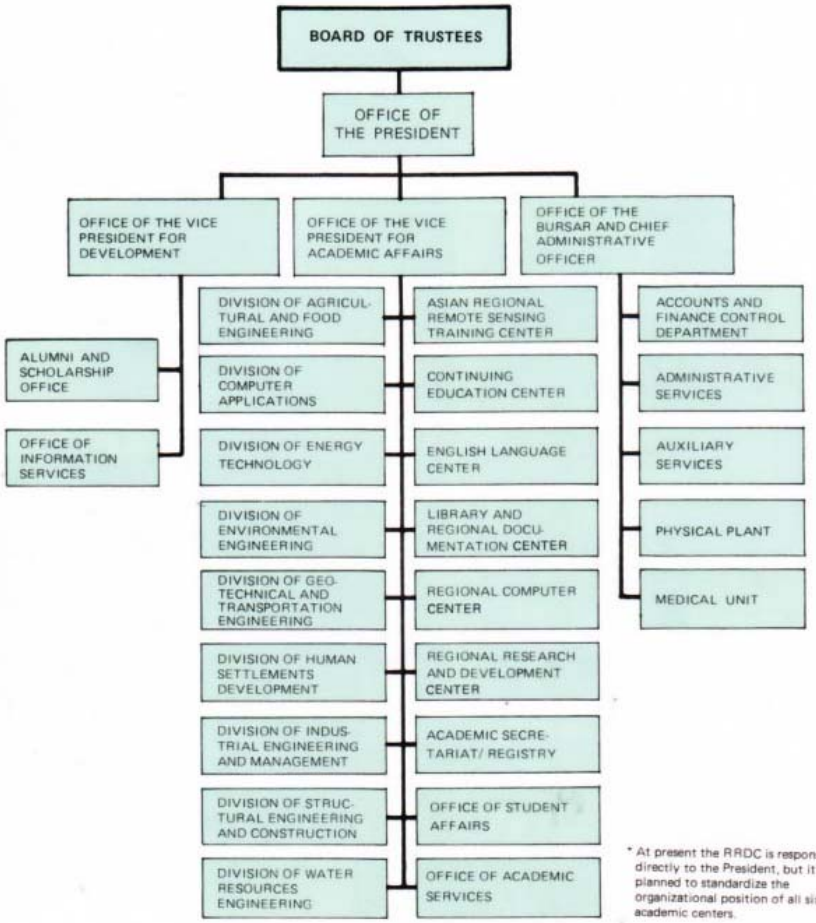
Cocktail scenes: 1 Dr. Thanat Khoman, Chairman of the AIT Board of Trustees, proposing a toast 2 From L–R, AIT Trustee and New Zealand Ambassador, H.E. Mr. R.L. Jermyn; Dr. Thanat; AIT Trustee and Chairman of the Taiwan Cement Corp., Dr. Chen Fu-Koo 3 Donors' Meeting at the AIT Center Auditorium 4 5 6 7 Sportsfest and Family Day activities

ORGANIZATIONAL CHART OF AIT

Committees in the Institute



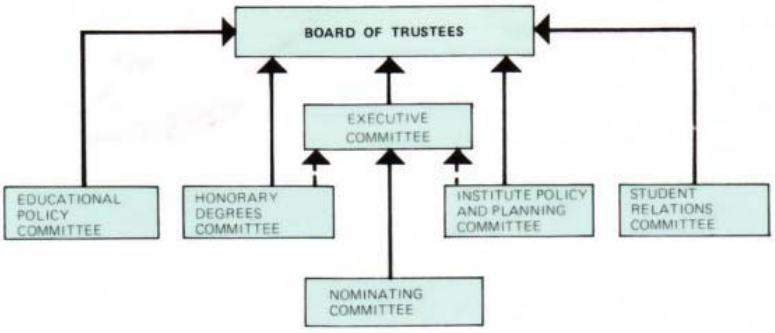
Offices in the Institute



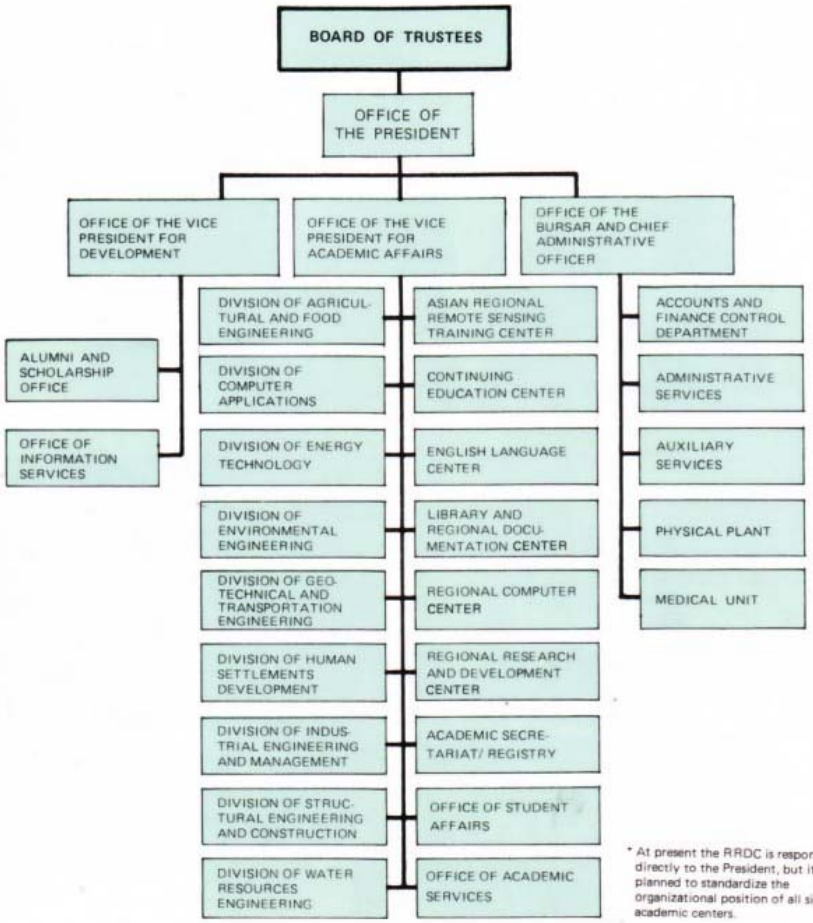
* At present the RRDC is responsible directly to the President, but it is planned to standardize the organizational position of all six academic centers.

ORGANIZATIONAL CHART OF AIT

Committees in the Institute



Offices in the Institute



* At present the RRDC is responsible directly to the President, but it is planned to standardize the organizational position of all six academic centers.

Senior Administrative Officers

SENIOR STAFF

Prof. Alastair M. North – President
Prof. Fumio Nishino – Vice President for Academic Affairs
Prof. Ricardo P. Pama – Vice President for Development
Mr. James H. Bradridge – Bursar
Mrs. Emilie Ketudat – Academic Secretary
Mr. W.P.P. Abeydeera – Academic Planning Officer
Mr. Nipon Masavisut – Director of Administrative Services
Mr. Steven Molnar – Director of Auxiliary Services
Mr. Pongsagdi A. Vejjajiva – Director of Finance
Mr. Noppadon Muangkroot – Director of Physical Plant

DIVISION CHAIRMEN

Dr. David Gee-Clough – Division of Agricultural and Food Engineering
Dr. Kanchit Malaivongs – Division of Computer Applications
Prof. Gerard Y. Saunier – Division of Energy Technology
Dr. B.N. Lohani – Division of Environmental Engineering
Prof. A.S. Balasubramaniam – Division of Geotechnical and Transportation Engineering
Prof. Karl E. Weber – Division of Human Settlements Development
Dr. O. Fujiwara – Division of Industrial Engineering and Management
Prof. D.M. Brotton – Division of Structural Engineering and Construction
Dr. Suphat Vongvisessomjai – Division of Water Resources Engineering

CENTER DIRECTORS

Dr. Nicanor C. Austriaco – Continuing Education Center
Mr. David Hall – English Language Center
Dr. Jacques Valls – Library and Regional Documentation Center
Dr. Milton J. Marcus – Regional Computer Center
Prof. P.P.G.L. Siriwardene – Regional Research and Development Center
Dr. Kaew Nualchawee – Asian Regional Remote Sensing Training Center

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Mr. Patchamuthu Illangovan – Student Union President

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J. Scott Younger B.Sc.(Hons.), Glasgow; M.S., California.
(Director, Vallentine, Laurie & Davies, Hong Kong)

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Sarah E. Goldin B.A., M.A., Brown; M.S., Ph.D., Carnegie-Mellon

John E. Lukens B.S., Worcester Polytechnic; Ph.D., Cornell

Kurt T. Rudahl B.A., New York; M.S., Wisconsin

Bruce K. Worcester B.S., Maine; M.S., Arizona; Ph.D., Iowa State

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C.P. Gupta M.Sc., Agra; M.Tech., Ph.D., I.I.T., Kharagpur

V.V.N. Murty B.Tech., M.Tech., I.I.T., Kharagpur; Ph.D., California (Davis)

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J. Mondot B.S., Nice; Ph.D., Paris, Orsay

ENVIRONMENTAL ENGINEERING

Zajac Vincent Ph.D.,Komensky

HUMAN SETTLEMENTS DEVELOPMENT

Herman Huizing Ph.D. Amsterdam

Khai S. Thio Ph.D., Wageningen.

INDUSTRIAL ENGINEERING AND MANAGEMENT

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Gerardus Balthazar Overbosch B.S., M.S., University of Amsterdam

Jacques Peters B.Sc., M.Eng., Catholic University of Leuven

STRUCTURAL ENGINEERING AND CONSTRUCTION

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D.N. Trikha B.Sc., Engg., Punjab; ME, Roorkee; DIC, Imperial College of Sci. and Tech., London; Ph.D., London

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Rameshwar Dayal Verma B.Sc., Agra; B.Eng.(Civil), Roorkee; M.Sc., Missouri; Ph.D., Cornell

Tsan-Wen Wang B.S., M.S., National Taiwan; M.S. Colorado ; Ph.D., South Dakota

G.N.Yoganarasimhan B.Sc., B.E., Mysore; M.E., Roorkee; Ph.D., Birla Inst. of Tech & Sci.

CEC 1984 Program of Activities

Date	Title	Co-Organizers/ Sponsors	No. of Participants
1. 20-28 Feb.	Regional Technical Workshop: "The Protection of the Marine Environment and Related Ecosystems"	EE/ESCAP	11
2. 12-31 Mar.	Short Course: "On-Farm Water Management"	RID	24
3. 31 Mar. – 6 Apr.	Training Course: "Construction and Use of Solar Dryers"	Mekong Committee/ ET/AFE	8
4. 16-27 Apr.	Short Course: "Development and Management of Groundwater"	WRE	19
5. 23 Apr. – 19 May	Training Course: "Mobile Campaign Unit"	RID/ World Bank	25
6. 30 Apr. – 19 May	Training Course: "Mobile Campaign Unit"	RID/ World Bank	25
7. 21 May – 9 June	Training Course: "Rural Road Constructtion and Maintenance"	Bangladesh/USAID/ GTE	15
8. 7-12 Aug.	Study Visit of Pakistan Officials to Thailand	Pakistan/USAID	5
9. 27 Aug. – 13 Oct.	Training Course: "Design of Small Scale Irrigation Systems"	DID Malaysia/ USAID-ASEAN/WRE	10
10. 3 Sept. – 30 Oct.	Short Course: "Application of Computer Techniques in Hydrology	WMO/CA/WRE	15
11. 13-15 Sept.	Workshop: "CEC Staff Development"	CEC	15
12. 20 Sept.	Seminar: "Materials Management"	IE	49
13. 27 Sept.	Seminar: "Modern Techniques in Water Industry Operations and Maintenance"	WRC, UK	40
14. 15 Oct. – 30 Nov.	Short Course: "On-Farm Water Management"	DID Malaysia/ USAID-ASEAN/AFE	11
15. 18 Oct.	Seminar: "Recent Developments in Rural Time Hydrologic Forecasting"	WMO/EGAT	30
16. 22 Oct. – 11 Nov.	Short Course: "Application of Remote Sensing Techniques to Flood Plain Zoning"	WMO/ESCAP/ ARRSTC	11
17. 24-27 Oct.	Technical Meeting on Flood Forecasting in Asia	WMO/WRE	18
18. 29-31 Oct.	Regional Workshop: "Planning and Implementation of HOMS in Asia and South-West Pacific"	WMO/WRE	18
19. 4-11 Nov.	Workshop: "Technology Dissemination for Development"	GPC/CDG	26
20. 9 Nov.	Seminar: "Computer in Business Management"	IE	23
21. 19-23 Nov.	Workshop: "Statistical Analysis in Hydrology"	WMO/CDG/GFIH	22
22. 10-21 Dec.	Third Asian School: "Solar Energy Harnessing Photovoltaic Technology and Systems Engineering with Emphasis on Rural Applications"	ET/AFME/ICTP/ UNESCO	30
23. 17-22 Dec.	Workshop: "Fuel Strategies in Asia"	EEC/ET	25

Note: The above activities were all held in Thailand.

Contract and Grant Research Completed During 1984

Title	Sponsor (s)	Principal Investigator (s)	Amount
Division of Agricultural and Food Engineering			
1. Water Resources Planning and Development for the Fifth Plan	NESDB, Thailand	Dr. Apichart	US$38,392
2. Information System of Water Resources Development in Thailand (Phase II)	Office of the Prime Minister, RTG	Prof. Singh	US$66,079
3. Agricultural Practices under Rainfed Condition in Thailand	Office of the Prime Minister, RTG	Dr. Apichart Dr. Phien (CA)	Baht1,500,000
4. Small-Scale Fishery Project in Pathumthani Province, Central Thailand: A Socio-Economic and Technological Assessment of Status and Potential	Office of the Prime Minister, RTG	Dr. Edwards Dr. Chongrak (EE) Prof. Weber (HSD)	US$81,331
5. Feasibility Study of Fish-Duck Integrated Farming at the Family Level in Central and Northeast Thailand	USAID/Thailand	Dr. Edwards	US$21,845
6. Re-use of Human Waste (Cesspool Sludge) and Cellulose Agriculture Residues for Fish Culture, Bangkok	ODA	Dr. Edwards	US$136,582
Division of Computer Applications			
1. Agricultural Practices under Rainfed Conditions in Thailand	Office of the Prime Minister, RTG	Dr. H.N. Phien Dr. Apichart (AFE)	Baht1,500,000
2. Guidelines for MIS for Water Supply Organization	WHO	Dr. Kanchit Dr. Lohani (EE)	US$8,000
Division of Energy Technology			
1. Evaluation and Selection of Ligno-Cellulose Wastes Which Can Be Upgraded into Substitute Fuels (Phase I)	EEC	Prof. Saunier Dr. Bhattacharya Dr. Islam Mr. Shah	(ECU) 64,000
2. Assessing Energy Resources and Needs in Developing Countries (Phase II)	EEC	Dr. Dang Van Giap Prof. Saunier Dr. Sauter-Servaes	US$50,000
3. Village-Size Solar Ice Maker	ODA	Prof. Exell Mr. Sommai	US$70,592
Division of Environmental Engineering			
1. Guidelines for MIS for Water Supply Organization	WHO	Dr. Lohani Dr. Kanchit (CA)	US$8,000
2. Masterplan for Rural Water Supply and Sanitation Project	NESDB, Thailand	Prof. Thanh Mrs. Samorn	Baht15,000,000
3. Hydraulic Calculation and Optimization of Chonburi Water Distribution System	Kocks Consult GmbH	Dr. Orth	US$5,254
Division of Geotechnical and Transportation Engineering			
1. Partial Site Investigation of Proposed Nong Ngoo Hao Airport Part I – Partial Field Exploration Part II – Laboratory Tests	Regional Engineering Consultants Co. Ltd., Thailand	Prof. Balasubramaniam Dr. Bergado Dr. Prinzl Dr. Yamada	US$4,845
2. Measurement and Monitoring of Vibration Due to Pile Driving at the Proposed Silom Palace Condominium	Concrete Products and Aggregate Co. Ltd., Thailand	Prof. Balasubramaniam Dr. Bergado Dr. Prinzl Dr. Yamada	US$7,929

Title	Sponsor (s)	Principal Investigator (s)	Amount
3. Measurement and Monitoring of the Level of Vibration at Three Historical Sites in Lopburi Province due to Railway and Highway Traffic	The Fine Arts Department, Thailand	Dr. Bergado Dr. Chandra Dr. Yamada	US$4,405
Division of Human Settlements Development			
1. Monitoring the Implementation of Agricultural Production Promotion Program in Three Self-Help Land Settlements of Northern Thailand (Phase III)	TG-LPP/GTZ	Prof. Weber	US$100,000
2. Monitoring the Implementation of Agricultural Production Promotion Programs in Three Self-Help Land Settlements of Northern Thailand and Northeastern Thailand (Phase IV)	TG-LPP/GTZ	Prof. Weber	US$150,000
3. Development of Microcomputer Software for Rural Center Planning	GTZ	Mr. Kammeier	US$3,000
4. Conservation and Development Planning for Phuket Town Center, South Thailand	GTZ/TAT, Thailand	Mr. Kammeier	US$5,500
Division of Structural Engineering and Construction			
1. Mechanical Properties of Prestressing Crimped Wire	Thai Special Wire Co., Ltd.	Dr. Pichai Mr. Chalat	US$2,000
2. Inspection and Tests of Hambo Elastic Rail Fastenings	State Railway of Thailand	Prof. Pisidhi Dr. Pichai Mr. Chalat	US$3,083.70
Division of Water Resources Engineering			
1. Optimum Water Resources Utilization Study, Choshui River Basin	Taiwan Power Co. and Water Resources Planning Commission, ROC	Dr. Suphat Dr. Tawatchai Prof. Fude I (EE)	US$174,810
2. Flood Routing and Control Alternatives of Chao Phraya River for Bangkok	NESDB, Thailand	Dr. Suphat Dr. Tawatchai	Baht 8,000,000

Contract and Grant Research in Progress During 1984

Title	Sponsor (s)	Principal Investigator (s)	Amount
Division of Agricultural and Food Engineering			
1. Small-Scale Integrated Farm	Ministry of Foreign Affairs, The Netherlands	Dr. Edwards Dr. Eppendorfer Prof. Singh	US$39,991
2. Fish Production with Composted Water Hyacinth	GTZ	Dr. Edwards	US$40,134
3. Use of Waste-Grown Tilapia as Fish Feeds	Research Initiation Grant, AIT	Dr. Wee	US$2,500
4. Aquaculture Production Basis	International Center for Living Aquatic Resource Management	Dr. Colman	US$3,924
5. Resource Recovery and Health Aspects of Sanitation	EEC	Dr. Edwards Dr. Chongrak (EE) Dr. Lohani (EE) Dr. Wee	US$159,741

Title	Sponsor (s)	Principal Investigator (s)	Amount
6. Buffalo/Fish and Duck/Fish Integrated Systems for Small-Scale Farmers	ODA	Dr. Edwards	US$57,376
7. Effect of Rainfall, Soil, and Land-Use on Soil Erosion in Solo Watershed, Java	DANIDA	Dr. Jensen	US$6,051
8. Soil Bin Operation	Thai Agency Engineering Co.	Dr. Gee-Clough	US$1,321
9. Evaluation, Improvement and Demonstration of a Manual Soybean Seeder	IDRC	Prof. Singh Dr. Gee-Clough	US$146,000
10. Heat Sterilization and Accelerated Drying of High Moisture Rice for Safe Storage	USAID	Dr. Jindal	US$150,000
11. EEC Tilapia Project	EEC	Dr. Edwards	US$47,667
12. Applied Nutrition for Rural Development	EEC	Dr. Jindal Dr. Tips (HSD)	US$66,299
Division of Computer Applications			
1. A Thai CAI for Teaching Arithmetic in Prathomsuksa 6	Ministry of Education, Thailand	Dr. Kanchit	US$8,700
Division of Energy Technology			
1. Assessing Energy Resources and Needs in Developing Countries (Phase III)	EEC	Dr. Dang Van Giap Prof. Saunier Dr. Sauter-Servaes	US$97,300
2. Evaluation of Ligno-Cellulose Wastes Which Can Be Upgraded into Substitute Fuels (Phase II)	EEC	Prof. Saunier Dr. Bhattacharya Dr. Islam Mr. Shah	(ECU) 250,000
3. Power Utilities Data Book	ADB	Dr. Lucas	US$31,975
4. Royal Orchid Hotel Solar Water Testing System (Consultancy Project)	Italthai International Hotel Ltd., Thailand	Prof. Saunier Mr. Bouix	US$6,264
5. French Support to ET Division for various solar energy research and development projects and equipment maintenance	AFME, France	Prof. Saunier	US$150,000
6. German R/D Project on Solar and Biomass	GTZ	Prof. Saunier Dr. Stahl	US$660,000
7. Solar Collector Testing Facility	GTZ	Prof. Saunier Mr. Van Winden	
8. Research on Utilization of Producer Gas	GTZ	Dr. Stahl	US$12,000
Division of Environmental Engineering			
1. Development of Models and Computer Programs for Least Cost Design of Water Distribution and Wastewater Collection System	GTZ	Dr. Orth	US$12,000/yr
2. Factors Affecting the Applicability of Water-hyacinth System for Waste-water Treatment in South-east Asia	GTZ	Dr. Orth	US$27,100
3. Resource Recovery and Health Aspects of Sanitation	AFE/EE/Ross Institute of Tropical Hygiene and Water Research Center	Dr. Edwards (AFE) Dr. Chongrak Dr. Lohani Dr. Wee (AFE)	US$159,741

Title	Sponsor (s)	Principal Investigator (s)	Amount
Division of Geotechnical and Transportation Engineering			
1. Investigation of Land Subsidence in AIT Campus	AIT	Dr. Bergado Prof. Balasubramaniam	US$6,167
2. Spatial Variability of Bangkok Subsoils	AIT	Dr. Bergado	US$1,280
3. Control of Congestion at Highly Saturated Junctions	British Science and Engineering Research Council, and British Transportation and Road Research Laboratory	Prof. Jones Prof. May Mr. Montgomery Dr. Hunt	US$83,784
4. Geotechnical Aspects of Mae-Kuang Irrigated Agriculture Development Project	The Consultant Joint Venture, Thailand	Prof. Balasubramaniam Dr. Yamada Mr. Sataporn	US$11,894
5. Foundation Investigation at the Site of a Cement Factory, Saraburi, Thailand	Siam City Cement Co. Ltd., Thailand	Prof. Prinya Dr. Bergado	US$13,144
6. Bangkok World Trade Center Project	Moh and Associates Pte. Ltd., Singapore	Prof. Balasubramaniam	US$8,122
Division of Human Settlements Development			
1. Prevention of Seasonal Malnutrition through the Transfer and Study of the Adoption Behavior of Alternative Sources of Protein	EEC	Dr. Tips	US$105,000
2. Feasibility of Improved Low-Rise/High Density Urban Development Patterns Based on the Chinese Townhouse	GTZ	Mr. Kammeier	US$5,000
3. Land Tenure for the Urban Poor in Bangladesh: Case of Dhaka City	Research Initiation Grant, AIT	Mr. Islam	US$2,000
4. Building a Productive Community after Land Reform: Pilot Project at Champhuang, Nakhon Ratchasima Province, Northeast Thailand	CIDA	Prof. Weber	US$7,500
5. Small Farm Development Issues in Northeast Thailand: Water Users'Attitudes Towards Utilization and Conservation	CIDA	Prof. Weber	US$500
6. Manual for Rural Development Planning in Nepal	CIDA	Prof. Weber	US$500
7. Evaluation of Local Level Projects in Asian Countries	Foster Parents Plan International	Prof. Weber	US$52,657
8. Development of an Alternative Strategy for Land Settlement Planning in Asian Countries	GTZ	Prof. Weber	US$12,000
9. Introduction of Appropriate Village Technology, Na Mai	CIDA	Prof. Dias	US$7,500
10. Project in Slum Reconstruction, Bangkok	CIDA	Mr. Chamniern	US$7,500
11. Comprehensive Demonstration Housing in Rural Area	CIDA	Dr. Etherington	US$7,500
Division of Water Resources Engineering			
1. Control of Waste Disposal from Offshore Tin Mining Phase	Department of Mineral Resources, Ministry of Industry, Thailand	Mr. Prida Dr. Suphat	Baht 7,116,528

Title	Sponsor (s)	Principal Investigator (s)	Amount
2. Improvement of Canals Connecting Klong Tawee Wattana and Klong Khoon Ratpinidjai to Alleviate Flood-Damaged West Bank of the Chao Phraya River	Department of Drainage and Sewerage, BMA, Thailand	Dr. Suphat	Baht1,500,000
3. Sediment Control of Mae Kum Luang Project	NEA, Thailand	Mr. Prida	Baht890,000
4. Hydraulic Model Study of Kaeng Krung Dam Spillway, Kaeng Krung Project	EGAT, Thailand	Mr. Prida	Baht796,300
5. Coastal Engineering Investigation of Laem Chabang Port, Thailand	AR Group Consultants Co., Ltd., Thailand	Mr. Prida	Baht1,624,712
Asian Regional Remote Sensing Training Center			
1. Surface Water Evaluation in Northeast Thailand – A Pilot Project Using Satellite Remote Sensing	NESDB, Thailand	Dr. Atwell Dr. Kaew	US$300,000
Library and Regional Documentation Center			
1. Broad Based Development Program (Information Dissemination)	CIDA	Prof. Weber (HSD) Dr. Valls	US$150,000
2. RDC Component of Australian Grant	Australia	Dr. Valls	US$160,000
3. Environmental Sanitation Information Center	IDRC	Dr. Valls	US$70,500
4. Renewable Energy Resources Information Center	USAID	Dr. Valls	US$80,000
5. Grant for LRDC	France	Dr. Valls	US$40,000
6. International Ferrocement Information Center	New Zealand USAID	Dr. Valls	US$20,000 US$57,000
7. Training Course on Specialized Information Centers	IDRC	Dr. Valls	US$45,000
8. Book Grant	Netherlands	Dr. Valls	US$10,000
Regional Computer Center			
1. Thai-German Plant Protection Program (TG-PPP): Plant, Pest and Disease Surveillance and Early Warning System	GTZ	Mr. Gonzales Mr. Mah Mr. Akbar	US$85,000

Scholarship Contributions

For AIT Internally Selected Candidates

Donor	Number of Scholarships 1983 – 84	1984 – 85 (Projection)
I GOVERNMENTS		
Australia	31	39*
Belgium	6	6
Canada/BBD	33	44*
Denmark	10	10
France	10	15*
Germany, Federal Republic of		
DAAD – Master's	30	15
DAAD – 'Sandwich' Doctoral	1	–
Japan – Master's	16	19
– Doctoral	8	11*
Netherlands – SIR	15	15
– ISS	3	3
New Zealand	1**	2
Norway	10	15
Switzerland	6	6
Thailand (King's)	7	15
Sub-total	187	215
II FOUNDATIONS		
AIT Foundation, Inc., USA		
– Henry Busignies Scholarship	–	1
– Starr Foundation	1	1
KEIDANREN, Japan	3	5*
Lee Foundation, Singapore	2	3
Sub-total	6	10
III INDUSTRIES		
BES Engineering Corporation, ROC	1	3*
China Technical Consultants Inc., ROC	1	1
Chinese Petroleum Corporation, ROC	2	2
Ret-Ser Engineering Agency, ROC	1	3
Shell International Petroleum Company	2	6*
Taiwan Cement Corporation, ROC	1	1
Taiwan Power Company, ROC	1	3*
Sub-total	9	19
IV INDIVIDUALS AND OTHERS		
Dorothy Marden, Hong Kong	–	1
George Marden, Hong Kong	1	–
European Economic Community	5	5
Sub-total	6	6
TOTAL	208	250

* Includes unused 1983 – 1984 grants

** Partial grant only

For Externally Nominated Candidates at AIT

Donor	Number of Scholarships 1983 – 84	1984 – 85 (Projection)
I GOVERNMENTS		
Germany, Federal Republic of		
DAAD – Countries Restricted	10	40
DAAD – Provincial Waterworks Authority, Thailand	2 + 5c	–
DAAD – Tanzania	1	–
CDG	13	1
DSE	1	–
ROC – Master's	27	29
USA		
AID – ASEAN	29 +23c	50
AID – RMI/Indonesia	– + 2c	–
AID – Pakistan Participant Training	–	– + 1c
Sub-total	83 +30c	120 + 1c
II UN AGENCIES		
UNDP – Bangladesh	– + 1d	–
UNDP – FAO	– + 1d	–
UNDP – WMO	1	–
WHO	2 + 3d	–
Sub-total	3 + 5d	–
III INTERNATIONAL ORGANIZATIONS		
IADS, USA	3 + 1d	–
Thai-Australia World Bank Land Development Project	–	– + 1d
World Bank Hydrology Project, Indonesia	2	1 + 1d
Sub-total	5 + 1d	1 + 2d
IV INDUSTRIES		
Nippon Steel Corporation, Japan	–	1
Siam Cement Co., Thailand	1	2
Sub-total	1	3
V NATIONAL GOVERNMENT ORGANIZATIONS		
Bank for Agriculture & Agricultural Cooperatives, Thailand	–	1
BMA, Thailand	–	1
DTEC, Thailand	–	1
Korea National Housing Corporation	–	– + 1c
University of North Sumatra, Indonesia	–	6
Sub-total	–	9 + 1c
TOTAL	92 +6d +30c	133 + 2d + 2c
GRAND TOTAL	300 +6d +30c	383 + 2d + 2c

d = Diploma

c = Certificate

Abbreviations

ADB	Asian Development Bank
ADRC	Academic Development and Review Committee
AFME	French Agency for Energy Management
AITAA	AIT Alumni Association
ASEAN	Association of Southeast Asian Nations
BBD	Broad Based Development
BMA	Bangkok Metropolitan Administration
CDG	Carl Duisberg Gesellschaft e.V. Germany
CIDA	Canadian International Development Agency
COSTED	Committee on Science and Technology in Developing Countries
DAAD	German Academic Exchange Services
DANIDA	Danish International Development Agency
DID	Drainage and Irrigation Department, Malaysia
DSE	Deutsche Stiftung fur Internationale Entwicklung
DTEC	Department of Technical and Economic Cooperation, Thailand
EEC	Commission of the European Communities for South-East Asia
EGAT	Electricity Generating Authority of Thailand
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization
GFIH	German Federal Institute for Hydrology
GPC	German Program Coordinator
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
IADS	International Agricultural Development Services, USA
IBM–AFE	IBM World Trade Americas/Far East Corporation
IBRD	International Bank for Reconstruction and Development
ICTP	International Center for Theoretical Physics, Italy
IDRC	International Development Research Center, Canada
IIE	Institute of International Education, USA
IRRI	International Rice Research Institute, Philippines
ISS	Institute of Social Studies, the Netherlands
KEIDANREN	Federation of Economic Organizations of Japan
KMIT	King Mongkut's Institute of Technology, Thailand
NEA	National Energy Administration, Thailand
NEB	National Environment Board, Thailand
NESDB	National Economic and Social Development Board, Thailand
NORAD	Norwegian Agency for International Development.
NIA	National Irrigation Administration, Philippines
NIDA	National Institute of Development Administration, Thailand
OAIS	Office of Academic and Information Services, AIT
RID	Royal Irrigation Department, Thailand
RTG	Royal Thai Government
SIR	Study in the Region
TPC	Taiwan Power Company, ROC
TG/LPP	Thailand-German Land Settlements Promotion Project
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
USAID	United States Aid for International Development
WHO	World Health Organization
WMO	World Meteorological Organization

Academic Divisions and Centers

AFE	Division of Agricultural and Food Engineering
CA	Division of Computer Applications
ET	Division of Energy Technology
EE	Division of Environmental Engineering
GTE	Division of Geotechnical and Transportation Engineering
HSD	Division of Human Settlements Development
IEM	Division of Industrial Engineering and Management
SEC	Division of Structural Engineering and Construction
WRE	Division of Water Resources Engineering
ARRSTC	Asian Regional Remote Sensing Training Center
ELC	English Language Center
LRDC	Library and Regional Documentation Center
PCAD	Programs in Computer Applications Development
RCC	Regional Computer Center
RRDC	Regional Research and Development Center
CEC	Continuing Education Center

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