

附 属 资 料



## ANNEX I

### ABSTRACT OF THE REPORT OF THE ADMINISTRATIVE DIVISION

#### 1. INVESTMENT JANUARY TO SEPTEMBER 1988 PERU GOVERNMENT

##### 1.1 Construction & Studies

Project 0 900-090-CISMID-Authorized budget

0.7.00	Studies	I/. 400,000
0.8.00	Construction Works	
	Authorized in January	I/. 18'030,000
	Executed	<u>I/. 16'842,000</u>
	Remain to September 1988	I/. 1'588,000

Additional budget of I/. 10'000,000 has been requested to compensate the devaluation.

##### 1.2 Furnitures (09.00)

Authorized	I/. 2'147,000
Executed	<u>I/. 2'130,700</u>
Remains to September 1988	I/. 16,300

1.3 Total	0.7 Studies	I/. 400,000
	0.8 Construction	I/. 18'030,000
	0.9 Furnitures	<u>I/. 2'147,000</u>
	Total authorized	I/. 20'577,000
	Executed	<u>18'973,000</u>
	Remains to September 1988	I/. 1'604,000

#### 2. DONATION OF JICA

##### 2.1 Construction Works

- Reaction wall and testing floor	I/. 8'890,000
- Electrical transformer & external electrical installation	I/. 9'610,000
- Finishing computer center	<u>I/. 600,000</u>

SUB-TOTAL 19'100,000

2.2 Others

- Electrical Stabilizer for the Computer Center	I/. 1'250,000
- Computer Center	534'136,000

SUB-TOTAL I/. 535'386,000

TOTAL 2.1 + 2.2 = I/. 19'100,000 + I/. 535'386,000 = I/. 554'486,000

3. BUDGET FOR 1989

For 1989, CISMID has presented a budget for I/. 126'848,200, as follows

3.1 General expenditures

01.00 Salaries *	I/. 7'765,800
02.00 Goods	17'686,000
03.00 Services	20'451,000
04.00 Transfers	2'242,900

SUB-TOTAL I/. 48'145,700

\* Do not included the salaries of most professors of CISMID who are under the cost of the Faculty of Civil Engineering.

3.2 Capital expenditures

07.00 Studies	I/. 950,000
08.00 Construction Works	60'484,000
09.00 Capital goods	17'268,500

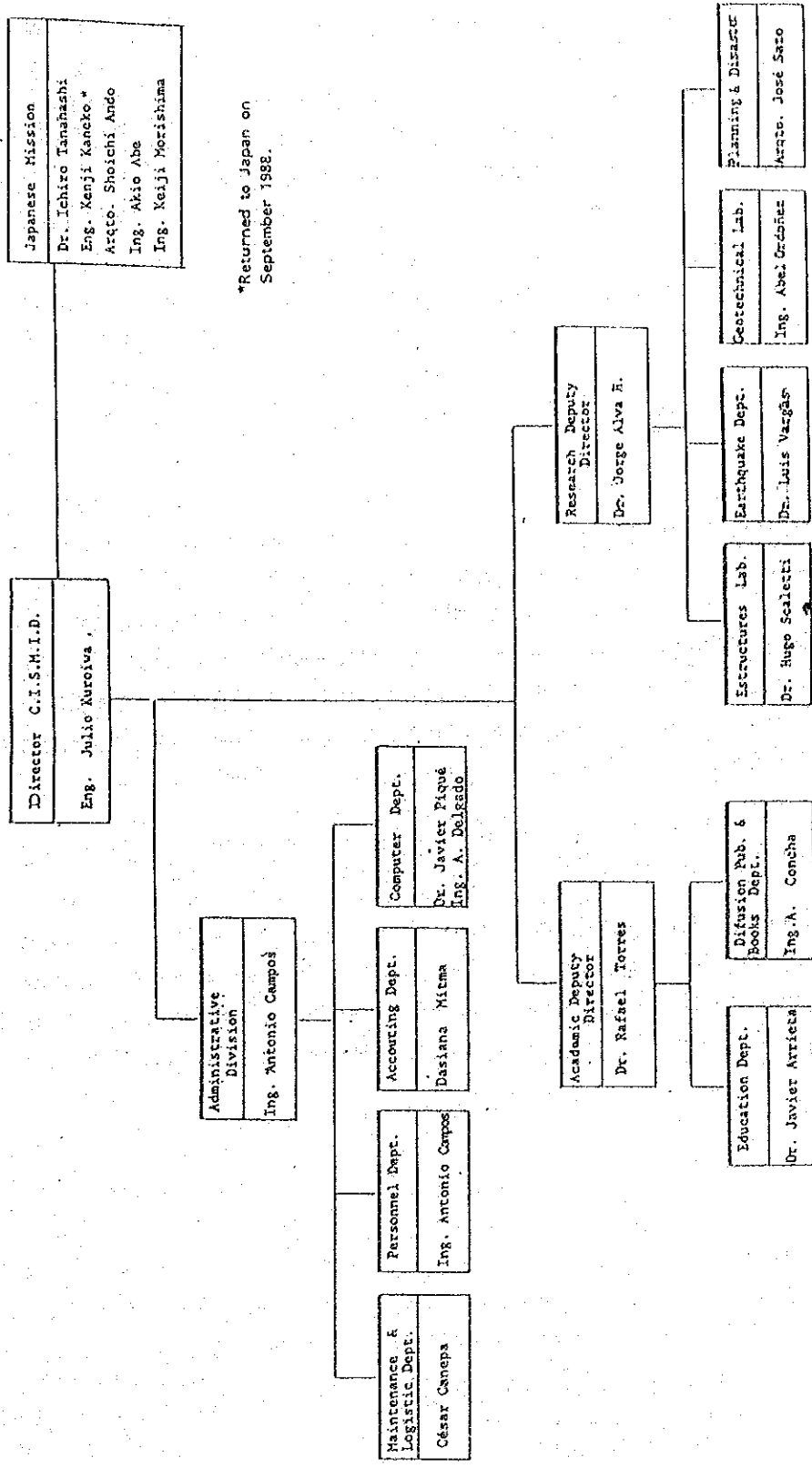
SUB-TOTAL I/. 78'702,500

TOTAL BUDGET FOR 1989\*

3.1 + 3.2 = I/. 48'145,700 + 78'702,500 = I/. 125'848,200

Adequate additional budget will be requested at appropriate time to compensate the devaluation.

JAPAN PERU EARTHQUAKE AND DISASTER MITIGATION RESEARCH CENTER  
 (C. I. S. M. I. D.) GENERAL ORGANIGRAM



\*Returned to Japan on September 1988.

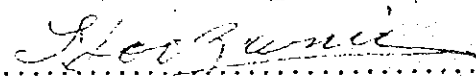
THE MINUTES OF THE MEETINGS  
BETWEEN THE JAPANESE  
ADVISORY SURVEY TEAM AND  
THE AUTHORITIES CONCERNED  
OF THE REPUBLIC OF PERU  
ON THE JAPANESE TECHNICAL  
COOPERATION FOR  
THE JAPAN-PERU EARTHQUAKE  
AND DISASTER MITIGATION  
RESEARCH CENTER

The Japanese Advisory Survey Team organized by the Japan International Cooperation Agency and headed by Mr. Shigenobu Koizumi, visited the Republic of Peru from October 16 to October 25, 1988, for the purpose of consulting with the authorities concerned of the government of the Republic of Peru on the "Japan-Peru Earthquake and Disaster Mitigation Research Center" (hereinafter referred to as CISMID), and held a series of working sessions and the Third Joint Committee Meeting, as stipulated in the Record of Discussions dated June 27, 1986.

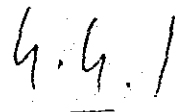
The attached Minutes of the Meetings are intended to record what were discussed concerning the implementation of the Project.

There is also included herewith the Third Joint Report of the Japan-Peru Earthquake and Disaster Mitigation Research Center prepared by Doctor Ichiro Tanahashi, Chief Advisor and Professor Julio Kuroiwa, Director of CISMID, prior to the visit of the Mission.

Lima, October 24, 1988.



MR. SHIGENOBU KOIZUMI  
LEADER  
ADVISORY SURVEY TEAM  
JAPAN INTERNATIONAL  
COOPERATION AGENCY, JAPAN



DR. JOSE IGNACIO LOPEZ SORIA  
RECTOR  
NATIONAL UNIVERSITY OF  
ENGINEERING  
(UNI)

## THE ATTACHED DOCUMENT

In the CISMID facilities at UNI, several meetings were held between the Advisory Survey Team and the Peruvian Counterpart who were accompanied by the Japanese Long Term Experts.

Firstly, the Joint Report for the period of November 1987 to October 1988 was explained to the Advisory Survey Team. Then the Peruvian side responded to a questionnaire prepared by the Advisory Team. From the above discussions, the most important topics to improve the organization and management of CISMID were agreed to be included in the Minutes.

### 1 . ORGANIZATION

- 1.1 It was agreed by both sides that it is necessary to speed up the process of approval of the Manual of Organization and Functions of CISMID.
- 1.2 The Peruvian side explained that the CISMID Advisory Committee was not implemented yet, waiting for the Manual of Organization and Functions approval. However the persons to the Committee were already chosen.
- 1.3 The Peruvian side informed that the CISMID personnel was increased in this period. There are 18 new CISMID members in the positions of secretaries and assistants.
- 1.4 The Peruvian side indicated that Engineering Foundation is being used to manage the research funds obtained by CISMID.
- 1.5 It was agreed by both sides to increase and improve the wages of CISMID personnel through the research projects and services.

### 2 . BUDGET FOR FY 1989

- 2.1 The Peruvian side explained that the budget for the FY 1989 has been already requested to the Ministry of Economy, Finance and Commerce. The amount as of July 1988 is indicated in the Joint Report and the salaries for most professors are not included in this figure. They are included in the Faculty of Civil Engineering budget. Because of high inflation rates in Peru, additional budget will be requested at appropriate times.

### 3 . PERSONNEL COUNTERPART

- 3.1 The Peruvian side indicated that under new peruvian laws it is not possible to hire new personnel.
- 3.2 It was agreed by both sides that additional peruvian counter parts could be hired with the funds from research projects and services of CISMID.


### 4 . CONSTRUCTION OF THE CENTER

- 4.1 The Peruvian side presented the problem of insufficient funds to complete the construction of the Structures Laboratory, about 25% of concrete and brick works and the finishing.
- 4.2 The Peruvian side will make their best effort to get from the go<sup>o</sup>vernment the necessary funds to complete the construction of the concrete and brick works before December 1988.
- 4.3 The Japanese side indicated their desire to collab<sup>o</sup>rate in a mini<sup>u</sup>m necessary way (finishing) to facilitate the installation of the recently arrived equipments for the Structures Laboratory.
- 4.4 It was informed from the Peruvian side that the first priority of CISMID is to obtain funds to complete the construction of the Structures Laboratory.

### 5 . TECHNICAL DEVELOPMENT PROGRAM

- 5.1 Both sides reviewed the achievements and progress of the pro<sup>o</sup>gram, that is presented in the Joint Report.
- 5.2 The Japanese side indicated the necessity to include the partici<sup>u</sup>pation of outside personnel from other institutions in CISMID ac<sup>u</sup>tivities.
- 5.3 The Peruvian side requested to the Japanese side for additional support for research projects.
- 5.4 It was agreed by both sides to recommend the procurement of research funds for CISMID activities.

h.





## 6 . TRAINING ACTIVITIES

- 6.1 The peruvian side explained that CISMID is supporting the graduate program in Structural Engineering given by the Faculty of Civil Engineering.
- 6.2 The Peruvian side expressed the difficulty of implementing Regular Course in accordance with the Master Plan of R/D, because of the change of the Peruvian Education System and the deterioration of the Peruvian Economy. Under these circumstances, the Peruvian side proposed to implement some short duration Regular courses on the subjects of microzonation, earthquake engineering and disaster mitigation around April, 1988, instead of the original course.  
In response to the above the Japanese side recognized the importance of the peruvian proposal and promised to convey it back to Tokyo for decision at its earliest convenience.
- 6.3 The Peruvian side expressed that a graduate course on Urban Planning and Natural Disaster Prevention is being planned in collaboration with the planning Institute of Lima at UNI. The advice of the United Nations Center for Regional Development located in Nagoya, Japan, has been requested.
- 6.4 The Peruvian side explained that CISMID has just finished the proposal to undertake the Third Country Seminars starting in 1989, which has been already submitted to the Japanese Embassy in Lima by official channel.

## 7 . DISPATCH OF JAPANESE EXPERTS

- 7.1 The Japanese side expressed its intention to dispatch a long term experts in the field of earthquake engineering around February, 1989, and a long term expert in the field of structural testing around June 1989. Both sides agree that the Peruvian side should provide adequate counterparts for those experts.
- 7.2 The Peruvian side requested that short term experts should be sent to Peru at appropriate time to test the equipments of the Structures Laboratory and teach their use to that laboratory staff members.

## 8. COUNTERPART TRAINING IN JAPAN

For the FY 1989 the Peruvian side requested 5 members to be trained in Japan. In response to the above request the Japanese side promised to convey such request for consideration of JICA in Tokyo.

## 9. EQUIPMENT

9.1 The Peruvian side reported that the equipment for the Structures Laboratory is arriving from Japan and that the Computer Center was inaugurated on October 19. The Peruvian side also promised to take good care of all the equipments donated by JICA, however due to the very critical economic situation of the country it was requested that the Japanese side provide maintenance fee for the computer center and, if possible, for the Structures Laboratory.

## 10. DISSEMINATION

10.1 It was agreed by both sides to publish the results of research work produced in the last two years through research work at CISMID.

10.2 It was also agreed to publish a brochure of the Computer Center and Geotechnical Laboratory. These publications will present the available facilities and the services they provide.

10.3 The Peruvian side requested to the Japanese side to increase the funds for research and publications.

10.4 It was agreed by both sides to continue the translations into Spanish texts and manuals issued in Japan.

10.5 It was agreed to continue with the CISMID policy of inviting researchers from other institutions in Peru to participate in CISMID academic and research activities.

10.6 The Peruvian side requested that the next Japanese Mission would visit Lima in August to coincide with the development of the Third Country Seminar.

## 11. INTERNATIONAL ACTIVITIES

11.1 It was recommended by the Japanese side that, in order to cope with the increasing international activities, CISMID should organize a department to take charge of those activities.

The Peruvian side agreed on this matter.

11.2 Both sides agreed that CISMID should ask support from international organizations to increase the support for its research programs and diffusion activities in the South American countries.

11.3 The Japanese side recommended to CISMID to coordinate the activities of the Peruvian institutions working on natural disasters and countermeasures, so Peru may participate in an organized way in the International Decade for natural Hazard Reduction.

In this sense it was also recommended to have a wide use of the equipment donated by JICA.

11.4 During trips made to South American countries by the Japanese Chief Advisor and the CISMID Director they were requested to send informations and publications made in CISMID. In this sense the Peruvian side requested to the Japanese side funds to cover those expenses.

## 12 . ACHIEVEMENTS

Both sides reviewed the achievements and progress so far that is presented in the Joint Report.

Even though some delay is observed in comparison with the original Tentative Implementation Schedule, The Japanese side appreciated that CISMID has made its at most efforts and some outputs, taking into consideration the present financial situation in Peru.

## 13 . PROGRAM FOR 1989

Both sides agreed to approve the program included in the Joint Report. However some recommendations were given by the Advisory Survey team to improve it.

## 14 . SPECIAL PROVISIONS

4. 14.1 It was agreed by both sides to clearly specify the responsibility of CISMID personnel in relation to the use and maintenance of the equipments and other goods.

3ra. Sesión del Comité Directivo  
del CISMID de la Facultad de  
Ingeniería Civil de la  
U.N.I.

Lugar CISMID, FIC, UNI  
Lima - Perú  
Fecha 24 de Octubre de 1988  
Hora 11 a.m.

ASISTENTES

Dr. José Ignacio López Soria  
Rector de la U.N.I.

4.4.1  
.....

Ing. Genaro Humala Aybar  
Decano de la FIC

*Genaro Humala Aybar*  
.....

Dr. César Reynafarge Hurtado  
CONCYTEC

*César Reynafarge Hurtado*  
.....

Arq. Shigenobu Koizumi,  
Jefe de la Misión

*Shigenobu Koizumi*  
.....

Dr. Ichiro Tanahashi,  
Jefe Asesor

*Ichiro Tanahashi*  
.....

Arq. Hitashi Aoki

*Hitashi Aoki*  
.....

Ing. Takashi Kminosono

.....

Ing. Aiji Zuzuki,  
Coordinador JICA

*Aiji Zuzuki*  
.....

Arqto. Shoichi Ando

*Shoichi Ando*  
.....

Ing. Julio Kuroiwa,  
Director CISMID

.....

Dr. Jorge Alva Hurtado  
Sub-Director CISMID

.....

Dr. Javier Arrieta,  
Sub-Director a.i. CISMID

.....

Ing. Antonio Campos,  
Jefe División Administración CISMID

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JOINT REPORT ON THE PROJECT  
JAPAN PERU CENTER FOR  
EARTHQUAKE ENGINEERING  
RESEARCH AND DISASTER  
MITIGATION OF THE  
FACULTY OF CIVIL  
ENGINEERING AT U.N.I.  
LIMA - PERU

C.I.S.M.I.D.

For the Period of November 1987  
to October 1988  
(Report N° 3)

1. OUTLINE OF CISMID

1.1 OBJECTIVES

(Please refer to Joint Report N° 1 of march 16, 1987)

1.2 ORGANIZATION

The main improvement in the organization of CISMID is that the FOUNDATION FOR ENGINEERING is now helping the Center in obtaining research funds, and to have flexible administration of those funds, according to the Peruvian Law.

The Foundation for Engineering is a non profit organization, which has the main objective to work for the advancement of engineering in Peru especially at the National University of Engineering.

The board members of the Foundation for Engineering are well known Peruvian personalities. The chairman is Dr. José López Soria, the Rector of UNI, and chairman at the CISMID Joint Committee, and the Executive Director is Prof. Luis Rivero of the Faculty of Mechanical Engineering at UNI. While Prof. Genaro Humala, the Dean of the Faculty of Civil Engineering continue being chairman of the Steering Committee.

The general frame under which CISMID is functioning is the Record of Discussions (R/D) signed between the Japanese Mission headed by Mr. Akira Takahashi and Dr. José López Soria, Rector of UNI.

The Manual of Organization of CISMID follows the R/D, the Peruvian University Law, and the Statutes of the National University of Engineering. The Manual has been sent to the Dean of the Faculty of Civil Engineering for its final approval.

1.3 ACTIVITIES

Please see Joint Report N° 1

1.4 PERSONNEL

Please see Joint Report N° 1

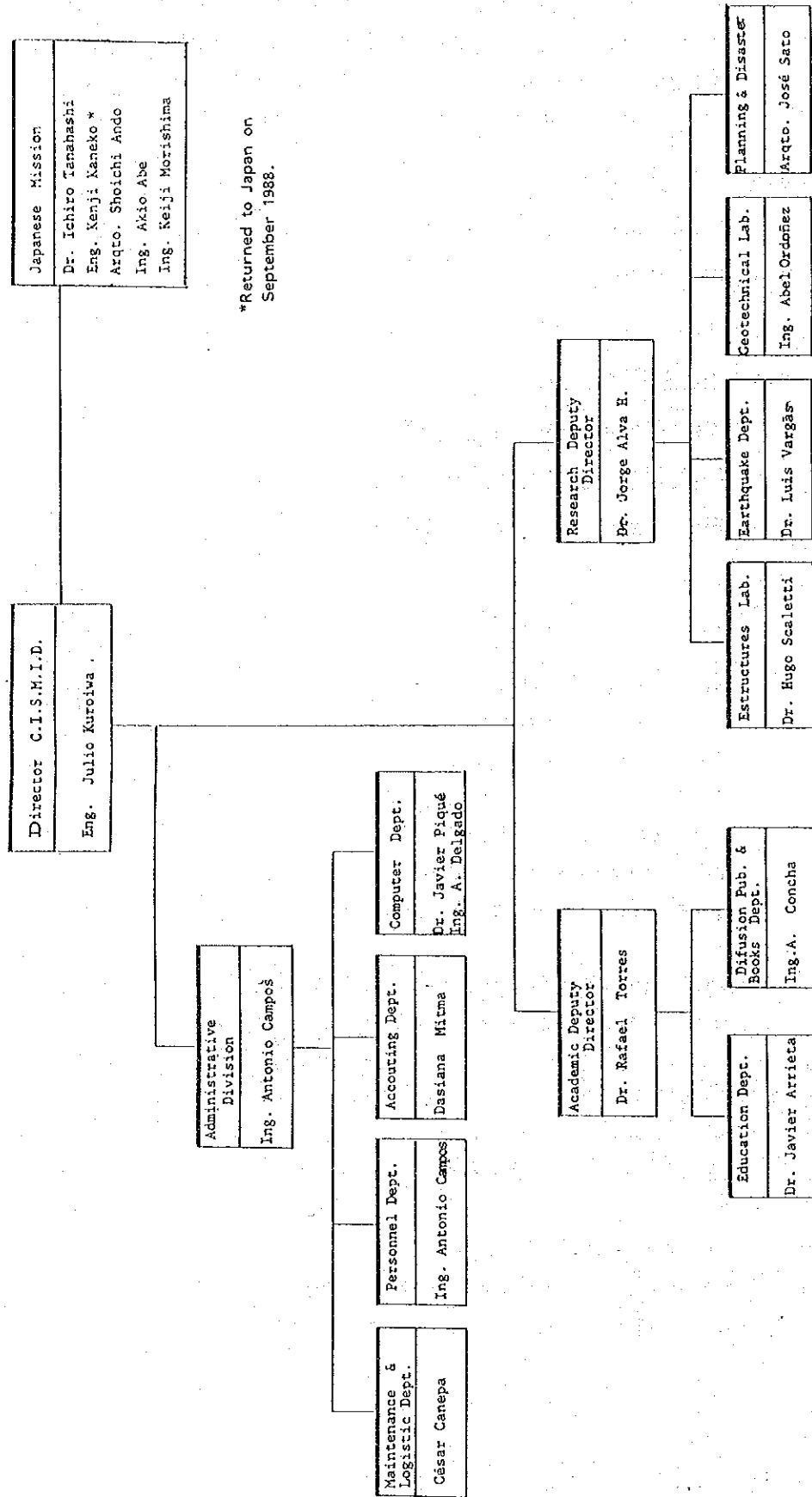
1.5 PARTICIPANTS

Please see Joint Report N° 1

1.6 FACILITIES AND FINANCING

Please see Joint Report N° 1

JAPAN PERU EARTHQUAKE AND DISASTER MITIGATION RESEARCH CENTER  
(C. I. S. M. I. D.) GENERAL ORGANIGRAM



\*Returned to Japan on September 1988.



TABLE I  
 THE PROJECT IMPLEMENTATION TO OCTOBER 1988  
 ACCORDING TO R/D ←-----→ (De acuerdo al R/D)  
 ACTUALLY ←-----→ (Actualmente)

ITEM \ C. Y.	1986	1987	1988	1989	1990	1991
DURATION OF PROJECT PHASE I PHASE II						
PERUVIAH ACTIVITIES						
1. Establishment of Tha Center	→					
2. Provision of Staff	→	→	→			
3. Construction A. A. (1F) A. A. (2F) Geotec. Lab. Struc. Lab. Access & Guard. Auditorium Gardening & Fence Residence	→	→	→			
4. Provision of Office Furniture/Instrument A. A. (1F) A. A. (2F) Geotec. Lab. Struc. Lab. Auditorium Residence		→	→	→		
5. Procedure of Receiving Equipment Provided by JICA (Custom Clearence, Carrying in the Center, Installation, Etc.)		→	→	→		

'87.3 '87.10 '88.10

IETM \ C.Y.	1986	1987	1988	1989	1990	1991
6. Technology Development						
Theoretical						
Geotec. Testing						
Struc. Testing						
7. Training Act.						
Regular Course						
Advanced Course						
8. Dissemination Act.						
Seminar						
JAPANESE ACTIVITIES						
1. Dispatch of Japanese Experts *						
(a) Long Term Experts						
1) Chief Advisor						
2) Coordinator						
3) Earthquake Engineering						
4) Geotec.						
5) Struc.						
6) Urban Disaster Plan						
7) Const. Work of Reaction Wall & Floor						
(b) Short Term Experts.						
1) Inst. of Equip. and Train. of Oper.						
2) Experts for (a)-3) ~ (a)-6)						

'87.3    '87.10    '88.10

\* Please see table 2 for detailed program of dispatching Japanese experts from April 1987 to March 1988.

ITEM	C. Y.						
	1986	1987	1988	1989	1990	1991	
2. Trainig of Peruvian Staff In Japan		←-----→					
3. Supply of Equipment For A. A. For Geotec. Lab. For Struc. Lab.		←-----→ ←-----→ ←-----→ -----→					
4. Construction of Raaction Wall & Floor		←-----→					
5. Diapatch of Survey Team Evaluation Team Others		↔ ↔	→ ↔ ↔			↔	

'87.3    '87.10    '88.10

## 2. MAIN SCHEDULE IN THE PAST (NOVEMBER 1987 TO OCTOBER 1988)

### 2.1 JAPANESE EXPERTS

During the period being reported, the following experts stayed at CISMID in Lima Perú.

For Long term period:

- |   |             |    |         |
|---|-------------|----|---------|
| - Dr. Ichiro Tanahashi (Chief Advisor)  | 87.1.25     | to | 89.1.24 |
| - Mr. Kenji Kaneko (Coordinator)  | 86.9.23     | to | 88.9.22 |
| - Mr. Junichi Endo (Supervisor, of Construction of the Reaction Wall and Testing Floor) | 87.2.9      | to | 88.3.30 |
| - Mr. Shoichi Ando (Expert in Disaster Mitigation Planning)                             | 88.6.2      | to | 89.6.1  |
| - Mr. Akio Abe (Expert in Geotechnical Engineering)                                     | 88.3.29     | to | 89.3.28 |
| - Mr. Akira Miyata (For the final review of the reaction wall and testing floor)        | During 88.3 |    |         |

### 2.2 PERUVIAN COUNTERPARTS

i) The following personnel have been designated to CISMID

- |                       |                                     |
|-----------------------|-------------------------------------|
| - Ing. Julio Kuroiwa  | Director                            |
| - Dr. Rafael Torres   | Academic Deputy Director            |
| - Dr. Jorge Alva      | Research Deputy Director            |
| - Ing. Antonio Campos | Chief of the Administration Office. |

#### Staff

- |                          |                     |
|--------------------------|---------------------|
| - Ing. Juan Chávez       | Ing. Jorge Meneses  |
| - Ing. Alberto Delgado   | Ing. Juan Rojas     |
| - Dr. Javier Arrieta     | Ing. Alberto Concha |
| - Ing. Abel Ordóñez      | Arqto. José Sato    |
| - Ing. Vicente Chariarse | Ing. Wilfredo Ulloa |
| - Ing. Oscar Vásquez     | Ing. Gaby Picón     |

#### Part Time Staff

- |                          |                      |
|--------------------------|----------------------|
| - Dr. Hugo Scaletti      | Dr. Javier Piqué     |
| - Dr. Buenaventura Ponce | Ing. Edgar Rodriguez |
| - Dr. Luis Vargas        |                      |

### Assistants

- |                       |       |   |
|-----------------------|-------|---|
| - Vicente Cruzate     |       | On leave from the University of Pedro Ruiz Gallo of Chiclayo, participating in a geotechnical joint research - project with CISMID. |
| - Eberth Cruzado      |       |   |
| - Luis Mundaca        |       |   |
| - Antonio Huamanchumo |       |   |
| - Pedro Ruesta        | (UNI) | Preparing his Master Degree Thesis.   |
| - Luis Ramirez        | (UNI) | Preparing his Civil Engineering thesis.   |
| - David Luna          | (UNI) | Preparing his Civil Engineering thesis  |
| - Luis Chang          | (UNI) | Preparing his Civil Engineering thesis  |
| - Hugo O'Connor       | (UNI) | To September 1988. He finished his Civil Engineering thesis   |

### Technicians in the Geotechnical Laboratory

- Roger Zumarán
- Victor Valenzuela
- Julio Olavarria

### Secretaries & Administration Personnels

- |                     |                  |
|---------------------|------------------|
| - Luisa Robles      | - Dasiana Mitma  |
| - Carolina Cisneros | - César Cánepa   |
| - Luzmila Portal    | - Tomás Guerrero |
| - Mariza Pedemonte  | - Ronald Vidal   |
| - Hilda González    | - Jesús Aguilar  |

### ii) Technical training of the Peruvian counterpart in Japan

#### Returned from Japan

- |                            |                |
|----------------------------|----------------|
| - Ing. Jorge Meneses       | 87.09 to 88.06 |
| - Ing. Juan Rojas          | 87.09 to 88.06 |
| - Ing. Juan Chávez         | 87.10 to 88    |
| - Dr. Javier Arrieta       | 88.02 to 88.7  |
| - Ing. A. F. San Bartolomé | 88.3 to 88.7   |
| - Dr. Javier Piqué         | 88.7 to 88.8   |

- Dr. Rafael Torres 88.7 to 88.10
- Ing. Alberto Delgado 88.7 to 88.12
- Ing. Alberto Zavala 88.8 to 88.10

Will travel to Japan very soon

- Ing. Alberto Concha 88.10 to 88.12  
(Geotechnical Engineering)

iii) Others

Being trained in the USA

- Ing. Juan Chávez At the University of California at Berkeley from August 1988. He is studying for Master degree.
- Luis Bozzo At the University of California. He finished the Master course and now is studying toward PhD

2.3 CONSTRUCTION WORKS & DESIGN (FROM NOVEMBER 1987 to OCTOBER 1988)

(Please See Annex I for the amount of investment)

Comments

Construction works, design of facilities, and provision of furnitures from the Peruvian side require special comments.

In December 1987, the Peruvian Government provided full budget for construction works, design of facilities and for furnitures for the fiscal year of 1988 (January to December), however the fast deterioration of the Peruvian economy from March to September, 1988, created very difficult problems in the country as inflation of near 1000% for the last twelve months. See Fig. 1 in Annex I.

Under this circumstance it is almost impossible to complete the 1988 program in the above mentioned items.

This situation was foreseen at the beginning of the year by the CIS MID responsables, so the strategy adopted to reduce the impact of the inflation was to buy from January to April the most important needed materials, but unfortunately not all materials were found in

in the market. Also, the construction was made as fast as possible during the first months of the year. Furnitures were also purchased during the first months of the year. The Rector and other authorities of UNI provided full support to implement the mentioned strategy.

At presente severe austerity measures are being taking by the Peruvian Government trying to control the very high inflation. Most of the public works are being stopped, except for the most important for the country. The CISMID project is priority for the country and its construction will continue.

Under this circunstance additional budget is being requested to the Government by UNI to compensate the devaluation, but by all means, it will not be at the level to restore the full budget for 1988.

i) Construction

- Academic-Administrative Building (1st. story 900 m<sup>2</sup>) it was completed. It was occupied in August 1987.
- Academic Administrative Building (2nd. story 900 m<sup>2</sup>) initially scheduled to be built in 1988 (According to R/D), its construction started in September 1986. It has been completed except for few finishing and some fixed furnitures.
- The Computer Center and Natural Disaster Data Bank have been finished. \* The Cafeteria is almost completed.
- Geotechnical Laboratory (700 m<sup>2</sup>)  
Its construction has been completed and is full functioning.
- Access  
No change respect to Joint Report N° 2
- Fence  
No change respect to the Joint Report N° 2
- Guard & Entrance Control  
The gross part has been completed waiting for finishing.

\* JICA provided funds for the finishing.

ii) Design

To October 1988, the following projects have been completed:  
Exterior design of lighting and the May 31st. Plaza.

The interior design of the CISMID Information Office where the Computer Center, Library, and Disaster Data bank, the Department of Disaster planning, in general the 2nd. floor of the Academic-Administration Building.

2.4 FURNITURE & EQUIPMENTS

i) Furniture (Peruvian side)

The largest purchase of furnitures was made from March to May 1988. From the I/. 2'130,700 budget for the current fiscal year, it was spent I/. 2'130,700. Esencially the furniture were for the 2nd. floor of the Academic-Administrative Building. It includes 40 personal desks for students, furnitures for the future International Division of CISMID, for the future office of United Nations agencies, etc.

ii) Facilities and Equipment donated with the Japanese budget of part of the 1987 and part of 1988 budgets.

- Reaction wall and floor

Construction works begun by the end of August 1987 and was completed and presented to CISMID on March 1988.

2.5 JOINT COMMITTEE & STEERING COMMITTEE MEETING AND THE WEEKLY CISMID COORDINATION MEETINGS

In addition to the meetings of the Joint Steering Committees to which are listed below, the weekly CISMID coordination meetings hold every monday with the participation of all the staff and all Japanese Mission Members have shown to be very useful. In these meetings all the problems are discussed looking for the best solution. The responsables for each task are designated during the sessions including the dead line for finishing up them, so every body know what is going in CISMID. Detailed records of these meeting are kept.



During this year there has been 4 Steering Committee Meetings. The schedule of those meetings were:

<u>Sesion Number</u>	<u>Date</u>
9	January 11
10	February 26
11	May 2
12	July 7

The chairman of these meeting was the Dean of Civil Engineering. The important decissions were made about the operation of CISMID.

### 3. MAJOR ACTIVITIES IN THE PAST

The past activities of CISMID from November 1987 to October 1988 have been as follow

#### 3.1 CELEBRATION OF THE FIRST ANIVERSARY OF CISMID

On May 31st, CISMID celebrated its first anniversary of the inaugu-  
ration of its facilities. It is also the 18th. anniversary of the Peru  
1970, 31st. earthquake which left 67,000 victims.

For that reasons, from May 31st. to June 2nd. it was held, organi-  
zed by CISMID, the 2nd. National Symposium on Disaster Preven-  
tion and Mitigation.

It was attended by 111 participants from Lima and from the interior  
of the country. Some lecturers were from outside and came to Lima  
under the auspices of the National Council of Science and Technolo-  
gy - CONCYTEC.

The Japanese experts also gave lectures at the Symposium. They  
were Tomoo Ohtsuki, Masahiro Sato and Akio Abe all of them from  
Tokyo Soil Research Company.

To emphasize that education and difusion of knowledges on natural  
disasters are very important to protect people and to mitigate their  
effects, under request of CISMID the Minister of Education declared  
May 31st. as "The National Day for the Education and Reflexion on  
Natural Disasters" Starting 1989, every year, from April 1st., when  
the school year is open in Peru, to May 31st, newspapers, TV and  
radio stations & magazines will difuse information and news on natu-  
ral disasters. To highlight that declaration the Philately Friend  
Association & CISMID prepared special edition stamp and specially  
edition stamp and specially printed envelope. During the Symposium  
and exposition of stamps related to natural disasters was held for  
the participants of that meeting and for the general public.

#### 3.2 RESEARCH AND RELATED ACTIVITIES

a) Research Projects already finished and their reports presented

1) "Seismic Risk of Tacna" (E.E.) \*

Responsibles: Dr. Jorge E. Alva  
Ing. Luis Vera (UNT)\*

\* EE = Earthquake Engineering

This was a cooperation project between the National University of Tacna and UNI with the sponsorship of CONCYTEC. The budget was I/. 60,000 . The report was already submitted.

\* National University of Tacna

2) "Catalog of Landslides and Avalanches in Peru" (G)\*

Responsible: Dr. Jorge E. Alva

This project was partially sponsored by CONCYTEC and had a budget of I/. 25,000. The report was finished and submitted.

3) "Preliminary Microzonation Study of Piura" (M) \*\*

Responsible: Ing. Julio Kuroiwa

Assistant: Arqt. José Sato

This project was partially sponsored by CONCYTEC with a provision of I/. 25,000. The report had been completed and submitted

4) "Volcanic Activities in Peru and Physical Counter measures" (M)

Responsible: Ing. Julio Kuroiwa

Assistant: Ing. Alberto Delgado

This project was partially sponsored by CONCYTEC providing I/. 25,000. The report was completed and submitted. One of the objectives of this and other projects is to use these materials as class notes in the courses and seminars offered by CISMID.

5) "Disaster Mitigation Planning in the Regional Development Process"

Responsible: Ing. Julio Kuroiwa (P) \*\*\*

This project was sponsored by the Organization of American States (OAS) and part of the investigations were made in Guatemala, El Salvador and Honduras.

Some material of the report to OAS was used in the paper "A National Plan of Hazard Reduction" presented in the 9th. World Conference on Earthquake Engineering (9WCEE) Tokyo & Kyoto, Japan 2-9 August, 1988.

Co-author of this paper Dr. Ichiro Tanahashi.

\* G = Geotechnical Engineering      \*\* M = Microzonation

\*\*\* P = Physical planning for Disaster mitigation

- 6) "Evaluation of Rigid-Arms Beam in Elastic Dynamic Analysis of Buildings as compare with a similar Finite Element Modeling"(E.E)  
Responsible: Dr. Javier Piqué

The materials of this research project were included in the paper .

"A Model Combination for Dynamic Analysis of Reinforced Concrete Frames" (E.E)

This paper was presented by Dr. Piqué during the 9WCEE Tokyo & Kyoto, Japan 2-9 August, 1988.

- 7) "The Huaycos (Mud & Debris flow) of chosica of 1987" (M)  
Civil Engineering thesis by: Hugo O'Connor

Advisers: Ing. Oscar Vásquez & Julio Kuroiwa

This research project was partially sponsored by CONCYTEC and was developed at CISMID facilities and included also many fields trips to Chosica area.

Part of the results were used in the paper "Investigación de los Huaycos de Chosica de 1987, Efectos y Medidas de Mitigación.

Presented in the VII National Conference on Civil Engineering Huaraz, September 1988.

8) Others

The CISMID staff had advised some thesis at the Faculty of Civil Engineering at UNI which have been completed; and some research works have been made outside CISMID like the PhD Thesis of Dr. Luis Vargas Loli, presented at the University of Texas, USA, but the results have been published by CISMID members as adviser or responsible for the research works. This explain the long list of papers presented in the VII National Conference of Civil Engineering held in Huaraz in September 1988.

b) RESEARCH PROJECTS UNDER EXECUTION (E.E)

- 1) "Accelerograph Network for Peru"

Responsible: Dr. Jorge E. Alva

This project is sponsored by JICA which provided the accelerographs and CONCYTEC providing a budget of I/. 150,000 for their installation.

The initial phase of the project has finished. Accelerograph are installed in Tacna and Lima. Observatory are being finished in Cuzco, Majes, Chimbote, Piura, La Molina and Callao.

2)"Microtremor measurements in La Molina" (M)

Responsible: Dr. Jorge Alva

This project is sponsored by IGI of UNI. The field work and its evaluation are finished. The report is being written.

3)"Hydrological study in the City of Lima for Urban Development" (M)

Responsibles: Ing. Edgar Rodriguez

Ing. José De Piérola

This project is sponsored by CONCYTEC and has a budget of I/. 128,000. This project is just started.

4)"Geotechnical Characteristics of Talara" (G)

Responsible: Dr. Jorge E. Alva

This project is sponsored by CONCYTEC and has a budget of I/. 25,000.00 The project is finished and the report is being written

5)"Research Studies in Masonry Buildings" (E.E)

Responsibles: Dr. Javier Piqué

Ing. Vicente Chariarse

This project includes the initial phase on an overall project on masonry building. The budget is I/. 6'000,000 and is sponsored by the Ministry of Housing and Construction through ININVI - The National Institute of Housing.

6)"Geotechnical Properties and Water Level Elevation in the City of Chiclayo" (G)

Responsibles: Ing. Félix De La Rosa (UNPRG)\*

Dr. Jorge E. Alva Hurtado (UNI)

\*This is a cooperation project between the National University Pedro Ruiz Gallo of Lambayeque and UNI

The project is sponsored by CONCYTEC and has a budget of I/. 600,000. Field and Laboratory work is finished.

7)"Microtremor Measurements in Cuzco" (M)

Responsible: Ing. Jorge Meneses

This project has a budget of I/. 250,000 and is sponsored by CONCYTEC , The project is just initiating.

8) "A National Plan of Hazard Reduction" (P)

Responsible: Ing. Julio Kuroiwa

This project is the continuation of one started in 1987 and is being improved with the objective of coordinates the participation of institutions and individual interested in natural disasters and how to mitigate their effects. The results of this project will be the program of the Peru participation in International Decade of Natural Hazard Reduction that will last from 1990 to the year 2000.

c) RESEARCH PROJECTS PRESENTED AND PROPOSALS BEING PREPARED

Only the most important projects are listed below:

1) "Seismic Vulnerability of Tacna and Tsunamis Research in the Peru Coast" (E.E)

Responsible: Ing. Julio Kuroiwa

2) "National Hazard Microzonation and Urban Planning for Piura" (P)

Responsible: Arqto. José Sato

Projects 1 & 2 were presented to CORDETACNA & CORDEPIURA respectively but due to lack of funds of these corporations the se projects were not accepted. In May, 1988, the projects were presented to UNDRO. The total budget including other activities related to CISMID is about U.S. \$50,000

3) "Building Technology Development" (E.E)

A preliminary draft has been presented to the Building Research Institute, Ministry of Construction, Government of Japan for the 1st. stage of 5 years.

Responsibles: CISMID Staff of the Structural Laboratory.

Coordinator: Dr. Javier Pique

4) "Model Study of National Disaster Mitigation in the Regional Development Process applied to Region Grau" (P)

Responsible: Ing. Julio Kuroiwa

Adviser: Dr. Ichiro Tanahashi

The proposal is being prepared. During the Kuroiwa's trip to Japan last August, he contacted Dr. Sazanami, Director of United Nations Center for Regional Development in Nagoya and made the first coordination respecto to this project.

5) Others

Some others research projects proposals has been presented or are being prepared for the application of CONCYTEC - The National Council of Science and Technology, ICI - The UNI's General Research Institute, ININVI National Institute of Housing and others funding institutions.

d) CONSULTING SERVICES

Soon after the Geotechnical Laboratory was equipped by JICA, it started functioning in research projects, development of graduate & undergraduate thesis, and for some consulting services which are listed below. These activities keep busy the laboratory personnel and equipments.

1. Geotechnical studies for ENCI in Tarapoto and Juanjui. May 1988. Budget I/. 132,000.00
2. Geotechnical Studies for ENCI in Tumbes and Chiclayo. September 1988. Budget of I/. 300,000
3. Geotechnical Studies in AUTODEMA in MAJES. September 1988. Budget of I/. 80,000.00
4. Geotechnical studies for ENCI in Barranca, Chimbote and Puerto Maldonado. October 1988. Budget of I/. 1'000,000.00

A proposal has been presented to a Mexican contractor to make a geotechnical studies along a gas pipe line near Pucallpa, in the peruvian jungle. The budget is about U.S.\$ 50,000

e) SPECIAL AGREEMENT & NOMINATIONS

- 1) To get support from the Ministry of Housing and Construction for the CISMID buildings technology development research projects, an agreement was signed between ININVI - National Institute of Housing Research and UNI - National University. For the fiscal year of 1988 ending in December ININVI will provide I/. 6'000,000 to CISMID for the studies for optimazing the use of bricks in buildings.
- 2) The Ministry of housing and Construction nominated Eng. Julio Kuroiwa, Member of the Board of Director of ININVI in May 1988.
- 3) CIPUL - The National Confederation of Liberal University Graduated Association (Included engineers architects, economists, lawyers, medical doctors) nominated Julio Kuroiwa as its representant to CONASUCO - National Superior Council of Consultory.
- 4) The National Council of Universities Presidents nominated Julio Kuroiwa as its representant to the National Institute of Civil Defense.
- 5) The Ministry of Housing and Construction ratified the nomination of Dr. Jorge Alva to the Board of Directors of the Geophysical Institute of Peru.
- 6) Dr. Rafael Torres was elected as Vice-President of the Civil Engineering Chapter of the Peruvian Society of Engineers.

f) INTERNATIONAL ACTIVITIES

During the period of November 1987 to October 1988 the following CISMID members have traveled to foreing countries.

- 1) Dr. Rafael Torres, traveled to Japan invited by the United Nations Center for Regional Development to participate as lecturer in an International Seminar on Disaster Mitigation in Regional Development Planning. October 1987.
- 2) Dr. Ichiro Tanahashi & Ing. Julio Kuroiwa traveled to Buenos Aires, Argentina, invited by the Panamerican Health Organization as lecturers to participate on a Seminar-Workshop on Health Administration in Large Cities December 1987.



- 3) Ing. Julio Kuroiwa traveled to various locations in Argentina, invited by UNDR0 to make a preliminary research on physical planning for disaster mitigation down stream of big dams. March 1988.
- 4) Ing. Julio Kuroiwa traveled to Guayaquil Ecuador to coordinate a workshop on Tsunamis invited by UNDR0. June 1988.
- 5) Ing. Julio Kuroiwa traveled to Japan invited by the United Nations Center for Regional Development to coordinate future actions between UNCRD and CISMID and to attend the 9th. World Conference on Earthquake Engineering. August, 1988.
- 6) Dr. Jorge Alva traveled to Canada invited by the Panamerican Institute of History and Geography to participate in a meeting on Seismic Risk in Latin America. September 1988.
- 7) Dr. Ichiro Tanahashi & Eng. Julio Kuroiwa traveled to Quito Ecuador invited as lecturers by the United Nations to participate in the Regional Meeting on National Disasters and Human Settlements Planning October 1988.
- 8) Eng. Julio Kuroiwa, invited by UNDR0 traveled to Bogotá Colombia to meet authorities of natural disasters research institutions to coordinate future actions of CISMID. Kuroiwa also traveled to Tumaco to attend a request of the Colombian Navy for advice on a research project on tsunami at that city, damaged by tsunamis in 1906 and 1979. The advice is being given with the auspices of UNDR0.  
He gave lectures at the Universidad del Valle, Cali & University of Bogotá.
- 9) The 10th. World Conference on Earthquake Engineering held in Tokyo & Kyoto Japan (2-9 August) were attended by the following CISMID Members: Dr. Ichiro Tanahashi, Eng. Julio Kuroiwa, Dr. Rafael Torres \*, Dr. Javier Piqué, Eng. Alberto Delgado \*, Dr. Javier Arrieta \*

(\* Under auspices of JICA)

During the trips to Sudamerican and other countries, CISMID members are taking contact with representants of institutions and individuals with some interest of CISMID, to coordinate future actions and to promote the 3rd. Country Seminar to be held in Lima from 1989.

Notes - Trips made to Japan under the R/D agreement are included in other part of this report.

10. Thanks to the Courtesy of the Building Research Institute, CISMID was able to promote its activities during the 9th. World Conference on Earthquake Engineering held in Tokyo & Kyoto - August 2, 9, 1988.

In the stand of B.R.I. two panels of CISMID were shown in the in the Exhibition Hal of the Conference at New Otani Hote, Tokyo.

These brochure of CISMID was distributed.

### 3.3 ACADEMIC & DIFUSION ACTIVITIES

#### i) Seminars & Simposiums

##### a) OCTOBER-NOVEMBER INTERNATIONAL SEMINARS

From October 19 to November 6, 3 International Seminars were held.

-"SEISMOLOGY AND SEISMIC MICROZONATION"

Attended by 30 participants

-"EARTHQUAKE ENGINEERING"

Attended by 120 participants

-"PHYSICAL PLANNING FOR DISASTER MITIGATION"

Attended by 120 participants

Each one lasted for one week.

The lecturer were both, members of the Japanese Mission, and Peruvian, from outside Lima who came to Lima under auspices of CONCYTEC, and from CISMID and others local institutions.

A number of participants came also from outside Lima with the help of CONCYTEC, their own institutions or by themselves.

##### b) NATIONAL SYMPOSIUM ON DISASTERS PREVENTION AND

MITIGATION, held from May 31st. to June 2nd. Among the lecturers were 3 Japanese experts from Tokyo Soil Research. It was attended by 111 participants a number of them from outside Lima, who came to Lima under the auspices of CONCYTEC.

c) SPECIAL SEMINAR ON GEOTECHNICAL ENGINEERING, given by Yutaka Mori of Tokyo Soil Research. This consulting company paid all the expenses of Mr. Mori. Special recognition was given on this matter by the UNI Rector, Faculty Dean CISMID Director and President of Tokyo Soil Research. The seminar was attended by 110 participants some of them came from inside the country with the economical assistance of CONCYTEC.

ii) Regular and Advanced Courses

- Master Course on Structural Engineering is being offered by the Faculty of Civil Engineering with the participation of CISMID Staff Members and using its facilities: classrooms and JICA donated equipment. The number of participants has substantially increased respect to previous years.
- The regular course on Earthquake Engineering is not being offered yet because the situation has changed in Peru after the R/D was signed. Now to be an associated professor & professor is required to bear the master degree. So students prefer to take courses to conduct them to that degree. This matter is discussed later in point 5.

iii) -Difussion Activities

- a) The Staff Members of CISMID have participated in a large number of lectures offered at the Faculty of Civil Engineering of UNI, and other institutions of Lima; and also many have been given outside Lima: Piura, Arequipa, Cuzco, Huaraz, Trujillo, etc.

In the lectures have also participated the young members of CISMID.

Some lectures were also given in foreign countries invited international agencies.

- b) Papers and articles have been published by CISMID Staff Members. Only to the VII National Conference on Earthquake Engineering, 21 papers of CISMID members were presented.

The list of the main publications made by CISMID members is given below

Publicacions

- VII National Conference on Civil Engineering - Huaraz 5-11 September 1987.
- 1) "Análisis Estructural de Presas de Arco por el Método de Elementos Finitos" (E.E.)  
Hugo Scaletti  
Mario Palma
  - 2) "Ensayo Seudo-Dinámico de Sistemas Estructurales" (E.E.)  
Juan Chávez  
Vicente Chariarse
  - 3) "Análisis Tridimensional de Sistemas Estructurales. Desarrollo y Aplicación de un Programa de Cómputo" (E.E.)  
Juan Chávez  
Mardonio Euscátegui
  - 4) "Estudio de Construcciones de Adobe de Dos Pisos. Resistencia de los Muros ante Carga Axial y Constante Horizontal." (E.E.)  
Isabel Moromi  
Rafael Torres  
Juan Torrejón
  - 5) "Utilización de Conchuelas en la Fabricación de Bloques de Concreto" (E.E.)  
Isabel Moromi  
Javier Arrieta  
Miguel Luna
  - 6) "Rigidéz de Muros de Albañilería con Aberturas" (E.E.)  
José Ortíz
  - 7) "Efectos del Agrietamiento del Concreto en el Comportamiento Sísmico de Presas de Gravedad" (EE)  
Luis Vargas
  - 8) "Optimización de Armaduras de Acero por el Método de Relación de Esfuerzos con Restricciones" (E.E.)  
Luis Zapata  
Juan Chávez  
Alberto Zavala

- 9)"Análisis del Empuje Hidrodinámico en Presas" (E.E.)  
Hugo Scaletti  
Luis Vásquez
- 10)"Propuesta de Combinación Modal para el Análisis Dinámico de Edificios" (E.E.)  
Javier Piqué  
Alberto Echarry
- 11)"Mapa de Distribución de Deslizamientos y Aluviones en el Perú". (M)  
Luis Chang  
Jorge Alva
- 12)"Arcillas y Lutitas Expansivas en el Norte y Nororiente Peruano" (M)  
Juan Rojas  
Jorge Alva
- 13)"Comparación de la Resistencia Cortante Drenada de un Suelo In-Situ y en Laboratorio". (G)  
Jorge Alva Hurtado  
José Gutierrez  
Vicente Chariarse
- 14)"Procedimiento Automático de Datos en el Ensayo de Compresión Triaxial" (G)  
Enrique Cabrera  
Jorge Alva
- 15)"Características Geotécnicas del Subsuelo de Huaraz" (G)  
Edwin Ordóñez  
Jorge Alva
- 16)"Investigación de los Huaycos de Chosica de 1987. Efectos y Medidas de Mitigación"(M)  
Hugo O'Connor  
Oscar Vásquez
- 17)"Diseño de Muros de Contensión con Contrafuertes" (EE)  
Alberto Concha-Fernández  
Jorge Alva

18) "El Coeficiente Sísmico en el Diseño de Presas de Tierra y de Enrocado". (E.E.)

Pedro Ruesta

Jorge Díaz

Jorge Alva

19) "Ingeniería Geotécnica en Zonas de Desastres Naturales, Quebrada Pedregal, Chosica-Lima - Perú". (M & G)

Alberto Martínez

José Martínez

20) "Planeamiento Urbano para Mitigación de Desastres en Tokyo Japón". (P)

Ichiro Tanahashi

Shoichi Ando

21) "Mitigación de Desastres en el Proceso de Desarrollo Regional" (P)

Julio Kuroiwa

9th. World Conference on Earthquake Engineering, Tokyo & Kyoto, Japan, 2 - 9 August, 1988.

1) "A Model Combination for Dynamic Analysis of Reinforced Concrete Frames" (E.E.)

Javier Piqué

2) "A National Plan of Hazard Reduction" (P)

Julio Kuroiwa & Ichiro Tanahashi

International Seminar - Workshop on Health Administration on Emergency Situation in Large Cities. Organized by the Panamerican Health Organization. Buenos Aires, Argentina 9-12 December, 1987.

"Vulnerability of Large Metropolitan Areas of the Americas Located in areas of High Seismicity. (P)

Julio Kuroiwa, invited lecturer

International Workshop on Tsunamis, organized by UNDRO. Guayaquil, Ecuador, June 3-6 1988. Coordinator J. Kuroiwa

"Physical Planning for Tsunami Effects Mitigation" (P)

Julio Kuroiwa, invited lecturer and coordinator of UNDRO.

Regional Meeting on Natural Disasters and Human Settlements  
Planning. Quito-Ecuador, 3-8 October, 1988

"Disasters Mitigation Planning in the Regional Development  
Process and Planning against Tsunamis in Peru". (P)

Julio Kuroiwa, invited lecturer

1st. National Symposium of Natural Disaster Prevention and Mi-  
tigation, organizaed by CISMID - June 1-3, 1987

The Proceedings of the Symposium and the Opening Ceremony  
of CISMID are included in a 346 pags. volume.  
One thousand (1000) units have been printed and are being dis-  
tributed in Peru and neighboring countries. The publication  
was made with the auspices of JICA.

c) PARTICIPATION in TV & RADIO PROGRAMS AND PRESS MEET-  
INGS.

Some members of CISMID were invited to participate in TV & ra-  
dio programs on natural disaster and their prevention and miti-  
gations which were accepted, because it is one important way to  
reach to the general public. CISMID members also participated  
in press meetings to give opinions on some specific problems  
which were of preoccupation of the public in that time.

5. ACTIVITIES PLANNING FROM NOVEMBER 1988 TO DECEMBER 1989

5.1 ACADEMIC ACTIVITIES

- a) In August 1989, one month seminar on "Hospital in Seismic Areas  
will be held as part of the 5 year Third Country Seminar to be  
offered with the support of JICA (1989 to 1993).  
This seminar is being organized with the participation of the Pa-  
namerican Health Organization that is going to provide 2 lectures  
and invite up to 5 participants. Twenty participants will be invited  
by JICA from Latinoamerican countries. The host country Peru  
will invite 10 participants, preferable from outside Lima under the  
auspices of CONCYTEC. The official request of the Peruvian Go-  
vernment has been already sent to the Japanese Embassy in Lima  
by official way.



- b) During the rest of 1988 and during 1989 CISMID will continue providing staff & facilities for the Master Course on Structural Engineering being offered by the Faculty of Civil Engineering of UNI.
- c) A new Master Course on Disaster Prevention and Mitigation in the Urban & Regional Planning Process is being organized. The advice of the United Nation Center for Regional Development located in Nagoya has been requested. It is expected that the new course may be offered starting in April 1990.

## 5.2 RESEARCH AND DEVELOPMENT

### a) Construction and material technology development

This investigation is to be continued during the rest of 1988 & 1989 dealing essentially with 2 aspects:

- Material Testing, i.e. brick blocks compression capacity, cement mortar, concrete, etc.
- Testing of assemblage of brick blocks and 1/2 scale test of a 5 story building (or two story full scale test). One of the main objectives of this testing is to verify the functioning of all the equipments and to transfer the testing know-how from B.R.I. to CISMID. It is expected that ININVI will continue providing funds for this project. To impulse this project a proposal has been submitted to the B.R.I. Ministry of Construction, Tsukuba, Japan to undertake a joint project.

### b) Techniques for Research on Microzoning

This study will continue to be developed according to the indication included in the Joint Report N° 1. The microzoning investigation of Piura, Chimbote, Huaraz, Cuzco and Tacna is to be continue with some funds provided by JICA & CONCYTEC. Geotechnical Laboratory members of CISMID are being trained in specific measurement techniques by Ing. Akio Abe, both in the laboratory and in the field.

c) Danger Degree Assessment and Disaster planning Methods  
in Urban Areas

This study will continue, specially in cities outside Lima like Piura and Tacna.

It was prepared a proposal for an importante project in downtown Lima (Monserrate) Waiting for approval and funding from the Peru Ministry of Housing and Construction. As a comment it may be said that in due of the very difficult economic situation of the country it will not be easy to get funds for this project.

Arq. Shoichi Ando is very enthusiastically working together with Arq. José Sato on the matter.

d) Other investigations

- Continuation of the projects, critical review of the microzonation study and urban planning of Chimbote city, and the effects of the heavy rain of 1983. \*

Responsibles: Arq. Julio Baba & Ing. Hermoza (External Consultants former staff members of Plan Chimbote)

Advisors: Ing. Julio Kuroiwa, Arq. José Sato, Dr. Jorge Alva, Dr. Ichiro Tanahashi & Arq. Shoichi Ando.

Parcial auspices: JICA & UNI

- Preliminary Microzonation of:

. Huaraz. -

Responsible:

Ing. Abel Ordóñez

Advisor

Dr. Jorge Alva

Partial auspices

JICA, CONCYTEC & UNI

is being continue

. Piura

Responsible

Arq. José Sato

Advisor

Dr. I. Tanahashi, Arq. S. Ando, Ing. J. Kuroiwa.

Partial auspices

JICA CONCYTEC & UNI

Is to be continue. Due to austerity measures being taken by the Government CORDEPIURA communicate to CISMID that in spite that they are interested in the project and approved, due to the lack of funds it will no possible for the time being that CORDEPIURA will provide funds. It will continue with the partial support of the institution listed above.

\* Additional explanations are given in the Annex

Tacna

Responsible	Dr. Jorge Alva
Advisor	Ing. Akio Abe
Partial Auspices	JICA, CONCYTEC, UNI

This project is the continuation of the Seismic Risk of Tacna. This project is a cooperation effort between the National University of Tacna and UNI. Some measurements are planned as well as soil exploration in the city of Tacna to prepare a preliminary microzonation.

- Regional Planning for Disaster Mitigation

Responsible:	Ing. Julio Kuroiwa
Advisor	Dr. I. Tanahashi
Possibly Sponsor	United Nations Centre for Regional Development UNCRD

The proposal is being prepared. Previous coordination has been made with the Director of the UNCRD in Nagoya, last August.

- Development of geotechnical testing.

To develop seminars and workshops on geotechnical testing to provide training to engineers and technicians from cities outside of Lima.

- Software Development. - At the CISMID Computer Center

Responsible	Dr. Javier Pique, Dr. Hugo Scalletti, Ing. Gaby Picón.
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Sponsor	Proposal will be prepared and submitted to adequate sponsor
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Other research proposals are being prepared and others will be prepared to be submitted to CONCYTEC, IGI, ININVI and other institutions.

5.3 DIFFUSION PROGRAMS

During 1989, two main activities are to be held:

- National Symposium on Natural Disasters. May 31 to June 2, 1989.
- International Seminars (3) on Microzonation, Earthquake Engineering & Disaster Planning. During the second part of october and beginning of November 1989.

- CISMID will also have a very active participation in the celebration of the 1st. anniversary of the declaration of May 31st. as the "Day for Education and Reflexion on Natural Disastes". From April st. to May 31st. an intense difussion program will be made by the Ministry of Education and Peru Civil Defense using TV & radio stations, newspapers and magazines.
- CISMID members will travel to outside Lima to give lectures on different topic related to natural disasters.

#### 5.4 PERSONNEL

##### i) Peruvian Staff

All the persons, at present 43, listed in 2.2 will continue working in CISMID. Some change will occurs in the assistant group preparing their thesis. It is foreseen that their number is to be increased.

Additional personnel will be nominated for the Structural Laboratory and the member of external consultant attached to specific projects will be substantially increased. The most important change is that new director and vice-director will be nominated by the end of the current year.

##### ii) Japanese Experts

Japanese experts to CISMID will be allocated according to R/D and construction schedule of testing facilities.

JAPANESE EXPERTS FROM OCTOBER 1987 TO JUNE 1989

TYPE OF EXPERT	NOMINATION	TIME																						
		1987			1988			1989																
		Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Set	Oct	Nov	Dec	Jan	Feb	March	April	May	June		
LONG TERM EXPERT	CHIEF ADVISOR																							
	COORDINATOR																							
	SUPERVISOR OF CONSTRUCTION																							
	DISASTER PLANNING																							
	EARTHQUAKE ENGINEERING																							
	GEOTECHNICAL ENGINEERING																							
	STRUCTURAL TEST																							
SHORT TERM EXPERT FOA EQUIPMENT & INSTRUCTIONS	GEOTECH EQUIP FIXING		←	→																				
	GEOTECH EQUIP ADJUSTING		←	→																				
	GEOTECH EQUIP OPERATION		←	→																				
	TECHNICAL GUIDANCE MISSION INCLUDING LECTURE		←	→																				
	STATIC JACK FIXING																							
	ACTUATOR SYSTEM FIXING 1																							
	ACTUATOR SYSTEM FIXING 2																							
	UNIVERSAL TEST FIXING																							
	MEASURING SYSTEM FOR STATIC TEST																							
	SHAKING TABLE SYSTEM FIXING																							
CRANE FIXING																								
UNIFORM POWER SYSTEM ADJ																								

----- PROGRAM  
 \_\_\_\_\_ ACTUL

## 5.5 CONSTRUCTION AND BUILDING DESIGN

### i) Construction

- . The Structural Laboratory will be finished by March 1988.
- . The external installations & facilities will be completed in the period being reported.
- . The auditorium is planned to be finished by the end of 1989. Its construction has been already started but is going slow because of the very critical economic situation of the country.
- . There is a possibility that off campus dormitory and facilities will be constructed during 1989.

### ii) Building Design

Practically the design of the CISMID facilities has been concluded except for the off campus facilities that is being done now.

## 6. PROVISION OF

### i) Furniture (Peruvian side)

The budget for the furnitures of the Structural Laboratory has been included in the fiscal year starting January 1st. 1989.

### ii) Equipment (Japanese side)

The equipments for the Structural Laboratory have just arrived to Peru.

## 7. OTHER ACTIVITIES

From November 1988 the following activities will be conducted

### i) Consulting services

- The Geotechnical Laboratory will continue providing consulting services to other official agencies, to the private activities, to continue training new personnel, and to get some funds to improve the laboratory personnel salaries and to pay for the maintenance fee.
- The new Computer Center will develop software for the CISMID research necessities, adapt and learn those of the software provided by JICA and donated by IBM and to provide consulting services with the same aim than the Geotechnical Laboratory.

ii) Natural Disasters Data Bank

A natural disasters data bank will be organized at CISMID, using the excellent facilities of the Computer Center equipped by JICA.

Other institutions like: IGP - Geophysical Institute of Peru, INGEMMET Geological, Mining & Metallurgic Institute, SENAMHI - National Service of Meteorology and Hydrology, DHINA- Direction of Hydrography and Navigation of the Peruvian Navy, etc. will be invited to organized together a National Data bank on Natural Disasters.

iii) Preparation of academic material

Material to be used in future lectures will continue to be prepared.

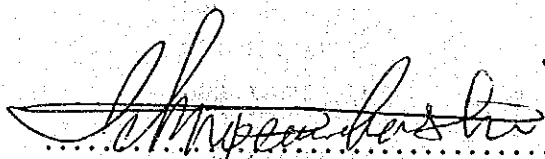
Three publications made in Japan is now being translated into Spanish

Other written materials is also being prepared together with TV cassettes.

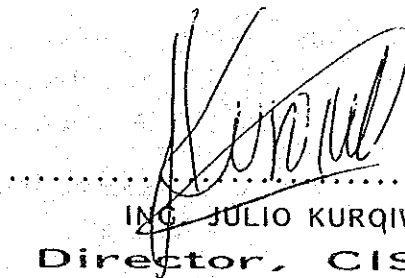
8. DRAFT OF PLANNING OF RESEARCH AND DEVELOPMENT FOR THE PERIOD OF NOVEMBER 1989 TO JUNE 1991.

No essential change has been made in the March, 1987 report. For detail please refer to Joint Report N° 1. However some adjustment will be needed, that will be made at appropriate time.

Lima, October 15, 1988.



DR. ICHIRO TANAHASHI  
Chief Advisor



ING JULIO KURQIWA  
Director, CISMID

## ANNEX I

### ABSTRACT OF THE REPORT OF THE ADMINISTRATIVE DIVISION

#### 1. INVESTMENT JANUARY TO SEPTEMBER 1988 PERU GOVERNMENT

##### 1.1 Construction & Studies

Project 0 900-090-CISMID-Authorized budget

0.7.00	Studies	I/. 400,000
0.8.00	Construction Works	
	Authorized in January	I/. 18'030,000
	Executed	I/. 16'842,000
	Remain to September 1988	I/. 1'588,000

Additional budget of I/. 10'000,000 has been requested to compensate the devaluation.

##### 1.2 Furnitures (09.00)

	Authorized	I/. 2'147,000
	Executed	I/. 2'130,700
	Remains to September 1988	I/. 16,300

1.3 Total	0.7 Studies	I/. 400,000
	0.8 Construction	I/. 18'030,000
	0.9 Furnitures	I/. 2'147,000
	Total authorized	I/. 20'577,000
	Executed	18'973,000
	Remains to September 1988	I/. 1'604,000

#### 2. DONATION OF JICA

##### 2.1 Construction Works

-	Reaction wall and testing floor	I/. 8'890,000
-	Electrical transformer & external electrical installation	I/. 9'610,000
-	Finishing computer center	I/. 600,000

SUB-TOTAL      19'100,000



2.2 Others

- Electrical Stabilizer for the Computer Center	I/. 1'250,000
- Computer Center	534'136,000

SUB-TOTAL I/. 535'386,000

TOTAL 2.1 + 2.2 = I/. 19'100,000 + I/. 535'386,000 = I/. 554'486,000

3. BUDGET FOR 1989

For 1989, CISMID has presented a budget for I/. 126'848,200, as follows

3.1 General expenditures

01.00 Salaries *	I/. 7'765,800
02.00 Goods	17'686,000
03.00 Services	20'451,000
04.00 Transfers	2'242,900

SUB-TOTAL I/. 48'145,700

\* Do not included the salaries of most professors of CISMID who are under the cost of the Faculty of Civil Engineering.

3.2 Capital expenditures

07.00 Studies	I/. 950,000
08.00 Construction Works	60'484,000
09.00 Capital goods	17'268,500

SUB-TOTAL I/. 78'702,500

TOTAL BUDGET FOR 1989\*

3.1 + 3.2 = I/. 48'145,700 + 78'702,500 = I/. 125'848,200

Adequate additional budget will be requested at appropriate time to compensate the devaluation.

**Inscripcion e Informes:**

Centro Peruano-Japones de Investigaciones Sismicas y Mitigacion de Desastres CISMID  
Av. Tupac Amaru s/n, Puerta No 7 del Campus de la Universidad Nacional de Ingenieria - UNI, Apartado 1301, Telefono 811070 anexo 194

Colegio de Ingenieros del Peru, Consejo Departamental de Lima, Secretaria del Capitulo de Ingenieros Civiles, Av. Arequipa 4947 Miraflores, Telefono 464650

**Horario de Conferencias:**

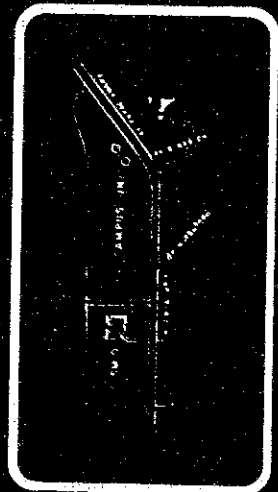
De 2.00 p.m. a 7.00 p.m.

**Costo de los Seminarios:**

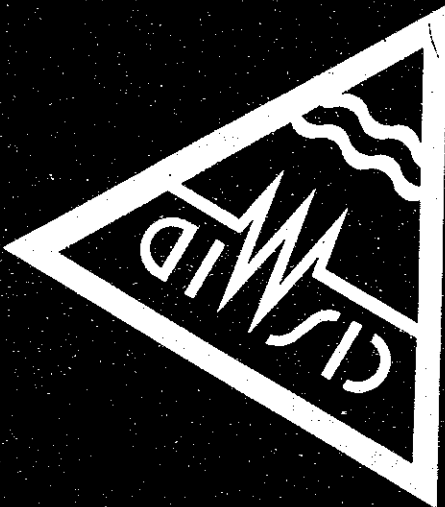
- Microzonificacion Sismica
  - Profesionales 2.500,00
  - Estudiantes 1.250,00
- Diseño Sismico de Construcciones
  - Profesionales 3.000,00
  - Estudiantes 1.500,00

**Local:**

Sala de Conferencias del CISMID, Av. Tupac Amaru s/n Puerta No 7, UNI



**Organizado por:**



CENTRO PERUANO-JAPONES DE INVESTIGACIONES SISMICAS Y MITIGACION DE DESASTRES

**Auspiciado por:**

- Agencia de Cooperacion Internacional del Japon
- Consejo Nacional de Ciencia y Tecnologia
- Colegio de Ingenieros del Peru
- Centro Regional de Sismologia
- Instituto Nacional de Defensa Civil
- JICA
- CONCYTEC
- GIP
- CERESIS
- INDECI



UNIVERSIDAD NACIONAL DE INGENIERIA FACULTAD DE INGENIERIA CIVIL

- \*Microzonificación Sismica
- \*Diseño Sismico de Construcciones
- \*Planeamiento para Mitigación de Desastres

# SEMINARIOS CISMID

Octubre - Noviembre 1988

## MICROZONIFICACION SISMICA

24 y 25 de Octubre

- Decenio Internacional para la reducción de Desastres Naturales.
- Zonificación del sub-suelo de Chiclayo.
- Riesgo y Microzonificación Sísmica en Arequipa.
- Sísmicidad del Cusco.
- Geotextiles e Ingeniería Geotextil.
- Características del sub-suelo y efectos sísmicos en Arequipa.
- Microzonificación y Riesgo Sísmico en Tacna.
- Riesgo Geológico en el Cusco.
- Microtemor en algunas ciudades.
- El uso de Geotextiles para reducir asentamientos.

### CONFERENCISTAS:

Ing. Conrado Bedoya J. (UNJBG-Tacna)  
Dr. Elmer Córdoba Málaga (UNSAAC)  
Ing. Jorge Cuenca Sánchez  
Ing. Félix De la Rosa (UNPRG-Chiclayo)  
Ing. Alberto Giesecke Marfo (CERESIS)  
Ing. Roberto Kosaka (UNSA-Arequipa)  
Ing. Calixto Yanqui Murillo (UNSA)

Expertos de la Misión Japonesa:

Ing. Akio Abe (CISMID)  
Ing. Mikio Futaki (BRI)\*

## DISEÑO SISMICO DE CONSTRUCCIONES

26, 27 y 28 de Octubre

- Construcciones en Quincha.
- Construcciones de Albarilería.
- Construcciones de Adobe.
- Comportamiento Sísmico de Estructuras de Concreto Armado.
- Análisis Sísmico de Construcción
- Comportamiento Estructural de Albarilería Armada.
- Comportamiento Inelástico de Estructuras de Concreto Armado.
- Respuesta Sísmica mediante el Método Pseudo-Dinámico.
- Software para Ingeniería Sísmica.

### CONFERENCISTA:

Ing. Juan Barrioia (PUCP)  
Ing. Héctor Gallegos (PUCP)  
Ing. Roberto Morales (CISMID-UNI)  
Ing. Isabel Morami (ININVI)  
Ing. José Ortiz (CISMID-UNI)  
Dr. Javier Piqué del Pozo (CISMID-UNI)  
Ing. Angel San Bartolomé (PUCP)  
Dr. Hugo Scalfetti Farina (CISMID-UNI)

Experto visitante del Japón:

Ing. Takashi Kaminosono (BRI)\*

## PLANEAMIENTO PARA MITIGACION DE DESASTRES

2, 3 y 4 de Noviembre

- Importancia del Planeamiento para Mitigación de Desastres en el Desarrollo Urbano y Regional.
- Desarrollo Urbano y Regionalización. Experiencias del Plan Chimbote luego del Sismo de 1970.
- Proyecto Majes.
- Plan Nacional para la reducción de riesgos.
- Hospitales en Zonas de Desastres.
- Experiencias en el Japón.
- Planeamiento para Mitigación de Desastres.
- Usos de Suelo.
- Proyectos de Renovación Urbana.
- Planeamiento de Facilidades Urbanas.
- Impacto del Mejoramiento de Facilidades de Prevención de Desastres.

### CONFERENCISTAS:

Ing. Nemesio Canelo (FIC-UNI)  
Dra. Luisa Garza (INP)  
Ing. Julio Kuroiwa (CISMID-UNI)  
Dr. César Lama More (IDESUNI)  
Arq. Jorge Quiroz Rivas  
Arq. Eduardo Rivera (AUTODEMA)  
Ing. César Solís (MVC)

Expertos de la Misión Japonesa:

Dr. Ichiro Tanchashi (Jefe de Misión)  
Arq. Shoichi Ando (CISMID)  
Dr. Yoshio Kumagai (U. Tsukuba)  
Ing. Yoshiteru Najima (BRI)\*

JICA