

3rd JSPS-DOST International Symposium on Environmental Engineering (Symposium on Harmonizing Infrastructure Development with the Environment)

Organized by: University of the Philippines Diliman, Tokyo Institute of Technology and Kasetsart University

Supported by: Japan Society for the Promotion of Science (JSPS) and

Department of Science and Technology (DOST) of the Philippines

9-10 March 2009, SEAMEO INNOTECH, University of the Philippines, Diliman, Quezon City, Philippines



1. BACKGROUND

In 1999, Tokyo Institute of Technology and the University of the Philippines Diliman, serving as core universities, embarked on a 10-year exchange program under the auspices of the Japan Society for the Promotion of Science (JSPS) in cooperation with the Philippine Department of Science and Technology (DOST) with the research theme "Civil and Environmental Engineering". The program initially involved 48 Japanese and 16 Philippine universities and in 2004, the program was expanded to involve 18 Thai universities coordinated by Kasetsart University. This research project focuses on the balance and harmony between the environment and infrastructure improvement/upgrade needed for national and urban development. Through this program, researchers are able to visit their counterparts and conduct research under the following groupings:

- Group 1: Atmospheric Circulation of Water and Environmental Problems, such as the movement of pollutants in fluid bodies, soil and ground water contamination.
- Group 2: Urban Development and Environmental Control, such as over-congested transportation and air pollution problems, strategy and planning for urban facilities.
- Group 3: Environmental Factors and the Safety/Stability of Foundation and Support Structures, such as seismic design of structures, liquefaction of weak reclaimed land.
- Group 4: Infrastructure Maintenance/Upgrade for Minimal Environmental Impact, such as retrofit of existing infrastructures, use of non-traditional resources.

To present research results, the first international symposium was held in 2003. In 2006, the second international symposium was held in conjunction with the Regional Symposium on Infrastructure Development in Civil Engineering (RSID).

On March 9-10, 2009, the 3rd and final symposium "Symposium on Harmonizing Infrastructure Development with the Environment" will be held to cap the 10-year Core University Program on Environmental Engineering that will highlight the launching of the book publication entitled "Sustainable Civil Engineering: Harmonizing Infrastructure Development with Environment" with contributions from researchers from the core and partner universities of the program.

2. SYMPOSIUM PROGRAM – DETAILS

Overview of the Symposium

The Symposium will be mainly a plenary session for Day 1 consisting of group presentations that will present the book publication and reactions from discussants with open forum. On Day 2, there will be 4 parallel technical sessions, 4 parallel workshop sessions on future collaboration and presentation on plenary session. Social events include opening ceremony, closing program and conference cocktails.

Venue: SEAMEO INNOTECH
Commonwealth Avenue, University of the Philippines Campus
Diliman, Quezon City, Metro Manila, Philippines

Date: March 9 (Monday)-March 10 (Tuesday), 2009

Symposium Program

Day 1, March 9 (Monday)	
8:30-9:00 AM	Registration
9:00-10:10 AM	Opening Ceremony (Plenary Session)
10:10-10:20 AM	Coffee Break
10:20 AM-12:20 PM	Group Presentations (Plenary Session)
12:20-1:20 PM	Lunch
1:20-2:40 PM	Reaction from Discussants (Plenary Session)
2:40-3:40 PM	Open Discussion
3:40-4:00 PM	Summary of Day 1 Activities and Announcements
4:30-6:00 PM	Cocktails
Day 2, March 10 (Tuesday)	
8:45 AM-12:00 NN	Technical Session (Parallel Sessions)
12:00-1:00 PM	Lunch
1:00-2:30 PM	Workshop for Future Collaboration (Parallel Workshop Sessions)
2:30-2:45 PM	Coffee Break
2:45-3:45 PM	Presentation of Workshop Outputs and Panel Discussion (Plenary Session)
3:45-4:00 PM	Closing Program (Plenary Session)

Opening Ceremony

Date and Time: March 9 (Monday), 9:00-10:10 AM
Venue: Pearl Hall, SEAMEO-INNOTECH

9:00-9:10 AM	Welcome Remarks	Professor Rowena Cristina L. Guevara Dean, College of Engineering University of the Philippines
9:10-9:30 AM	Messages	Dr. Emerlinda R. Roman President University of the Philippines Professor Chitoshi Miki Professor, Faculty of Engineering Tokyo Institute of Technology Dr. Kou Ikejima Director, Bangkok Office Japan Society for the Promotion of Science Usec. Fortunato T. De la Peña Undersecretary for Science and Technology Services Department of Science and Technology Republic of the Philippines
9:30-9:45 AM	JSPS Activities with Asia	Ms. Madoka Takeno Asian Program Division International Program Department Japan Society for the Promotion of Science
9:45-10:10 AM	Presentation of the JSPS Core University Program on Environmental Engineering	Professor Osamu Kusakabe Coordinator (Japan) JSPS Core University Program on Environmental Engineering & Professor, Department of Civil and Environmental Engineering Tokyo Institute of Technology

Master of Ceremonies:

Dr. Hilario Sean O. Palmiano
Assistant Professor, Institute of Civil Engineering, UP Diliman

Group Presentations (Presentation of Book Contents)

Date and Time: March 9 (Monday), 10:20 AM-12:20 PM
Venue: Pearl Hall, SEAMEO-INNOTECH

10:20-10:50 AM	Group 1 – Atmospheric Circulation of Water and Air and Environmental Problems	Dr. Kazuo Nadaoka Professor, Department of Mechanical and Environmental Informatics Tokyo Institute of Technology
10:50-11:20 AM	Group 2 – Possibility of Mobility Management in Asian Countries	Dr. Satoshi Fujii Professor, Department of Civil and Environmental Engineering Tokyo Institute of Technology
11:20-11:50 AM	Group 3 – Safety & Stability of Infrastructures against Environmental Impacts	Dr. Hideki Ohta Professor, Department of International Development Engineering Tokyo Institute of Technology Dr. Andres W. C. Oreta Professor, Department of Civil Engineering De La Salle University-Manila
11:50 AM-12:20 PM	Group 4 – Infrastructure Maintenance/Upgrade for Minimal Environmental Impact	Dr. Sohichi Hirose Professor, Department of Mechanical and Environmental Informatics Tokyo Institute of Technology

Moderator::

Dr. Hilario Sean O. Palmiano
Assistant Professor, Institute of Civil Engineering, UP Diliman

Reaction from Discussants

Date and Time: March 9 (Monday), 1:20-4:05 PM
Venue: Pearl Hall, SEAMEO-INNOTECH

1:20-1:40 PM	Reaction from Discussants	Mr. Sawaeng Jongsutjarittam Chief, Asia and Africa Section Office of International Affairs National Research Council of Thailand
1:40-2:00 PM		Dir. Ramon Santiago Director for Public Safety and Special Operations Office of the General Manager Metropolitan Manila Development Authority
2:00-2:20 PM		Dr. Danilo C. Terante Chairman, Specialty Division for Water Resources and Hydraulic Engineering Philippine Institute of Civil Engineers
2:20-2:40 PM		Usec. Demetrio L. Ignacio Undersecretary for Policy and Planning Department of Environment and Natural Resources <i>to be represented by</i> Engr. Julian D. Amador Director Environmental Management Bureau
2:40-3:40 PM	Open Discussion	

Moderator:
Dr. Benito M. Pacheco
Professor and OIC Director, Institute of Civil Engineering, UP Diliman

Technical and Workshop Sessions (Parallel)

On Day 2, the Symposium will have 4 parallel technical sessions in the morning and 4 parallel workshops in the afternoon.

Room Assignment for the Technical and Workshop Sessions

Session Room		L. B. Soriano Hall	Training Room No. 4	Pearl Hall 1	Pearl Hall 2-3
Time		Ground Floor, Main Building	3rd Floor Main Building	Pearl Hall	Pearl Hall
Technical Session					
AM	8:45-12:00 (195 min)	Group 1 – Atmospheric Circulation of Water and Air and Environmental Problems	Group 2 – Urban Infrastructure Development and Environmental Management	Group 3 – Safety & Stability of Infrastructures against Environmental Impacts	Group 4 – Infrastructure Maintenance/ Upgrade for Minimal Environmental Impact
Workshop for Future Collaboration					
PM	1:00-2:30 (90 min)	Group 1 – Atmospheric Circulation of Water and Air and Environmental Problems	Group 2 – Urban Infrastructure Development and Environmental Management	Group 3 – Safety & Stability of Infrastructures against Environmental Impacts	Group 4 – Infrastructure Maintenance/ Upgrade for Minimal Environmental Impact

Technical Sessions (Parallel)

March 10 (Tuesday), 8:45 AM to 12:00 NN

Session Rooms: L. B. Soriano Hall, Training Room No. 4, Pearl Hall 1, Pearl Hall 2-3

There will be 4 parallel technical sessions, the program of each session is found in the following section of this bulletin.

Group 1 – Atmospheric Circulation of Water and Air and Environmental Problems

Moderator: Dr. Enrico C. Paringit
Assistant Professor and Chair, Department of Geodetic Engineering, UP Diliman

Group 2 – Urban Infrastructure Development and Environmental Management

Moderator: Dr. Karl N. Vergel, Associate Professor, Institute of Civil Engineering, UP Diliman

Group 3 – Safety & Stability of Infrastructures against Environmental Impacts

Moderator: Dr. Andres W. C. Oreta, Professor, Department of Civil Engineering, DLSU-Manila

Group 4 – Infrastructure Maintenance/Upgrade for Minimal Environmental Impact

Moderator: Prof. Ronaldo S. Gallardo
Associate Professor and Chair, Department of Civil Engineering, DLSU-Manila

Workshop for Future Collaboration

March 10 (Tuesday), 1:00-4:05 PM

Session Rooms: L. B. Soriano Hall, Training Room No. 4, Pearl Hall 1, Pearl Hall 2-3

There will be 4 parallel workshop sessions on future collaboration.

Objectives of the Workshop

- a) to provide an assessment of the core university program in terms of human resource development, research outputs and other outcomes; and
- b) to discuss on future directions and activities.

1:00-2:30 PM

Workshop (Parallel Sessions)

Group 1 – Atmospheric Circulation of Water and Air and Environmental Problems

*Facilitators: Dr. Enrico C. Parangit (UPD), Dr. Yuji Toda (Nagoya Univ.) and
Dr. Cheema Soralump (KU)*

Group 2 – Urban Infrastructure Development and Environmental Management

Facilitators: Dr. Ma. Sheilah G. Napalang (UPD) and Dr. Daisuke Fukuda (Tokyo Tech)

Group 3 – Safety & Stability of Infrastructures against Environmental Impacts

*Facilitators: Dr. Jonathan R. Dungca (DLSU-Manila),
Dr. Tomohide Takeyama (Tokyo Tech) and Dr. Apiniti Jotisankasa (KU)*

Group 4 – Infrastructure Maintenance/Upgrade for Minimal Environmental Impact

*Facilitators: Dr. Nathaniel B. Diola (UPD), Dr. Ken Watanabe (Tokyo Tech) and
Dr. Wanchai Yodsudjai (KU)*

2:30-2:45 PM

Break

2:45-3:45 PM

Plenary Presentation of Workshop Outputs and Open Forum

Moderator:

Dr. Jiro Takemura

Secretary (Japan), JSPS Core University Program on Environmental Engineering

Associate Professor, Department of Civil and Environmental Engineering

Tokyo Institute of Technology

Symposium Cocktails

Date and Time: 9 March 2009 (Monday), 4:30-6:00 PM
Venue: Pearl Hall
SEAMEO-INNOTECH

The symposium cocktails will be hosted by the University of the Philippines Diliman (UPD) Chancellor Sergio S. Cao.

Program

4:00-4:30	Arrival of Guests	
4:30-4:40	Welcome Remarks	Dr. Sergio S. Cao Chancellor University of the Philippines Diliman <i>to be represented by</i> Dr. Lorna I. Paredes, Vice-Chancellor for Academic Affairs
4:40-4:50	Message/ Introduction of Participants	Professor Ricardo G. Sigua Coordinator (Philippines) JSPS Core University Program on Environmental Engineering Chair, Local Organizing Committee
4:50-5:50	Cocktails	
	Cheerdancing	The UP PEP Squad
	Message	Dr. Trakool Aramraks Coordinator (Thailand) JSPS Core University Program on Environmental Engineering & Associate Professor, Department of Civil Engineering, Kasetsart University
	Message	Professor Hideki Ohta Professor, International Development Engineering Tokyo Institute of Technology
	Serenade	The UP Singing Ambassadors
5:50-6:00	Closing Message	Professor Osamu Kusakabe Coordinator (Japan) JSPS Core University Program on Environmental Engineering

Emcees:

Dr. Cresencio M. Montalbo Jr., Associate Professor, SURP, UP Diliman
and

Dr. Ma. Antonia N. Tanchuling
Associate Dean for Student and Industry Linkage, College of Engineering, UP Diliman

Closing Ceremony

Date and Time: March 10 (Tuesday), 3:45-4:00 PM
Venue: Pearl Hall

Program

3:45-3:55 PM	Summary and Remarks	Professor Osamu Kusakabe Coordinator (Japan) JSPS Core University Program on Environmental Engineering
3:55-4:00 PM	Symposium Closing	Professor Ricardo G. Sigua Coordinator (Philippines) JSPS Core University Program on Environmental Engineering Chair, Local Organizing Committee & Professor, Institute of Civil Engineering University of the Philippines Diliman

Master of Ceremonies:

Dr. Ma. Sheilah G. Napalang
University Extension Specialist
National Center for Transportation Studies, UP Diliman

3. TECHNICAL SESSION – GUIDELINES FOR PRESENTATION AND DEADLINE FOR PRESENTATION SLIDES AND FULL PAPERS

Presentation Time

The Local Organizing Committee has set the presentation time to a maximum of **20 minutes** and discussion time to a maximum of **5 minutes** per presenter.

Mode of Presentation

The presenter may use LCD Projector during the technical sessions. Computers will be provided in each room which can be used for the presentation.

Schedule of Presentation

The schedule can be seen in the following pages.

Deadline for Submission of Presentation Slides and Full Papers

Please submit your presentation slides (MS PowerPoint format) to the Symposium Secretariat by e-mail on or before **MARCH 4, 2009** (WEDNESDAY).

JSPS-DOST 3rd Symposium Secretariat <jsps09@gmail.com>

Please submit your full paper in accordance with paper format on or before **MARCH 17, 2009** for inclusion in the Symposium Proceedings. Please e-mail the file of your paper to the Secretariat.

Technical Session Program

Group 1 – Atmospheric Circulation of Water and Air and Environmental Problems

March 10 (Tuesday), 8:45 AM-12:00 NN

Session Room: L.B. Soriano Hall (Ground Floor, Main Hall)

Chair: Dr. Enrico C. Paringit (UPD)

- 1) A Comprehensive Study on Terrestrial Threats and Related Impacts on a Fringing Reef**
Ariel C. Blanco* (Tokyo Tech), Dr. Kazuo Nadaoka (Tokyo Tech), Takahiro Yamamoto (Tokyo Tech), Dr. Atsushi Watanabe (Tokyo Tech), Ma. Cecilia R. Paringit (DLSU) and Eugene C. Herrera (Tokyo Tech)
- 2) Collaborative Monitoring, Research, and Numerical Modeling of Laguna Lake, Philippines for Sustainable Water Resource Management and Ecosystem Conservation**
Eugene C. Herrera* (Tokyo Tech), Dr. Kazuo Nadaoka (Tokyo Tech), Ariel C. Blanco (Tokyo Tech) and Emitterio C. Hernandez (LLDA)
- 3) Integrated Coastal Water Investigation at Puerto Galera: Towards the Development of Decision Support System for Water Resources Management**
Tanuspong Pokavanich* (Tokyo Tech), Dr. Kazuo Nadaoka (Tokyo Tech), Ariel C. Blanco (Tokyo Tech) and Eugene C. Herrera (Tokyo Tech)
- 4) Large Scale Morphodynamics in Pasig-Potrero River Basin-River Morphology and Delta Formation-**
Dr. Yuji Toda* (Nagoya U) and Yuta Mizoguchi (Nagoya U)
- 5) Subsurface Contamination and Waste Management**
Dr. Cheema Soralump* (KU)
- 6) Chromium Capture in Cement**
Patcharaporn Suwanvitaya* (KU), Prasert Suwanvitaya (KU) and Chalermchai Trakoolpudpong (KU)
- 7) Post closure activities at the Quezon City Controlled Dumping Facility (QCCDF)**
Dr. Maria Antonia N. Tanchuling* (UPD) and Dr. Jiro Takemura (Tokyo Tech)
- 8) Engineering Study of Coastal Erosion in an Embayment Shore and its Mitigation**
Dr. Eric C. Cruz* (UPD) and Jose Carlo Eric L. Santos (AMH Phils. Inc.)

*presenter

Technical Session Program

Group 2 – Urban Infrastructure Development and Environmental Management

March 10 (Tuesday), 8:45 AM-12:00 NN

Session Room: Training Room No. 4 (3rd Floor, Main Hall)

Chair: Dr. Karl N. Vergel (UPD)

1) Change in Travel Behavior Through Mobility Management

Dr. Kasem Choocharukul (CU), Hong Tan Van (Tokyo Tech) and
Dr. Satoshi Fujii* (Tokyo Tech)

2) Public Transport Trip Chain in Developing Countries

Dr. Yasunori Muromachi* (Tokyo Tech) and Caesar P. Rubite (Tokyo Tech)

3) Population Density and Automobile Use

Takamasa Suzuki* (Tokyo Tech) and Dr. Yasunori Muromachi (Tokyo Tech)

4) Is Environment and People Friendly Transport Possible in the Philippines?

Dr. Jose Regin F. Regidor* (UPD)

**5) Analysis of Measures to Reduce Delay and PM Emission at
Jeepney Stops in Metro Manila by Microsimulation**

Dr. Hilario Sean O. Palmiano* (UPD)

**6) Exploring the Influence of Social Factors to Travel: A Case Study of University
Workers and College Students in Metro Manila, Philippines**

Grace U. Padayhag* (Tokyo Tech) and Dr. Daisuke Fukuda (Tokyo Tech)

*presenter

Technical Session Program

Group 3 – Safety & Stability of Infrastructures against Environmental Impacts

March 10 (Tuesday), 8:45 AM-12:00 NN

Session Room: Pearl Hall 1

Chair: Professor Andres W. C. Oreta (DLSU Manila)

- 1) **Geotechnical Hazards and Disaster Mitigation Technologies**
Dr. Jiro Kuwano (Saitama U), Dr. Warakorn Mairaing (KU), Dr. Mark Albert H. Zarco (UPD) and Mary Ann Q. Adajar* (DLSU)
- 2) **Seismic Retrofitting Techniques for Bridges to Reduce the Environmental Impact of Earthquake on Existing Structures**
Dr. Benito M. Pacheco* (UPD), Dr. Kazuhiko Kawashima (Tokyo Tech) and Prof. Romeo Estaño (DLSU)
- 3) **Case Studies on Slope Failures in the Philippines: A 10 Year Retrospective**
Dr. Mark Albert H. Zarco* (UPD) and Dr. Sandra G. Catane (UPD)
- 4) **Geotechnical Centrifuge Tests on the Lateral Response of Double-Pile Group Subjected to Laterally Spreading Liquefied Ground**
Dr. Jonathan R. Dungca* (DLSU), Jun Izawa (Tokyo Tech), Sakae Seki and Dr. Jiro Kuwano (Saitama U)
- 5) **Analytical Study on the Seismic Performance of Carbon Fiber Sheet-Retrofitted RC Bridge Columns**
Richelle G. Zafra* (Tokyo Tech) and Dr. Kazuhiko Kawashima (Tokyo Tech)
- 6) **Behaviour of Soil Slopes Subjected to Heavy Rainfall in Thailand: Monitoring and Warning System for Landslides**
Dr. Apiniti Jotisankasa * (KU)
- 7) **Ground Improvement of Soft Bangkok Clay Using Surcharge Technique with PVD**
Dr. Barames Vardhanabhuti* (KU) and Mr. Arun Prabmark (KU)

*presenter

Technical Session Program

Group 4 – Infrastructure Maintenance/Upgrade for Minimal Environmental Impact

March 10 (Tuesday), 8:45 AM-12:00 NN

Session Room: Pearl Hall 2-3

Chair: Prof. Ronaldo S. Gallardo (DLSU Manila)

- 1) **Research on the Shear Behavior of RC Beams and Image Analysis**
Dr. Ken Watanabe* (Tokyo Tech), Hironori Higashi (Tokyo Tech) and Dr. Junichiro Niwa (Tokyo Tech)
- 2) **New Trends in Ultrasonic NDE for Concrete: Non-Linear Ultrasonic Evaluation and Ultrasonic Imaging by SAFT**
Oscar Victor M. Antonio Jr.* (Tokyo Tech), Dr. Sohichi Hirose (Tokyo Tech) and Abaid A. Shah (Tokyo Tech)
- 3) **Correlation Between Concrete Strength and Combined Nondestructive Tests for Concrete Using High-Early Strength Cement**
Razon C. Domingo* (FEU-EAC) and Dr. Sohichi Hirose (Tokyo Tech)
- 4) **Green Binder Technology Development Using Fly Ash Based Geopolymer**
Parames Kamhangrittirong* (KU), Dr. Prasert Suwanvitaya (KU), Patcharaporn Suwanvitaya (KU) and Prinya Chindaprasirt (KU)
- 5) **Mechanical Properties of Newly developed Repair Materials**
Dr. Wanchai Yodsudjai (KU)*
- 6) **Non-destructive Corrosion Measurement in Existing Reinforced Concrete (RC) Structure**
Dr. Melito A. Baccay (TUP)*
- 7) **Finite Element Analysis of Reinforced Concrete Beam under Corroded Condition**
Dr. Kitjapat Phuvoravan* (KU) and Thanyathorn Amatavirakul (Qbic E&A Co. Ltd.)
- 8) **Reliability-Based Service Life Prediction of Reinforced Concrete Bridge in Marine Environment**
Dr. Piya Chotickai* (KU) and Surattachon Chauytook (KU)

*presenter

4. INTERNET ACCESS

For those with laptop/note PCs, wireless Internet access service can be availed at the symposium site through the following access code:

Wi-Fi key: 99EC358157

5. ACCOMMODATION

SEAMEO INNOTECH International House

For those participants who will be needing accommodation, the following are the rates for rooms at the SEAMEO INNOTECH:

Deluxe Room:	PhP2,000/room/day with B&T inside room
Standard Room:	PhP1,200/room/day – common B&T
Buffet Breakfast (optional):	PhP250.00/person
Plate Breakfast (optional):	PhP200.00/person

6. NEW DEVELOPMENTS

TriNoma

TriNoma, or Triangle North of Manila, is a large shopping mall in Quezon City in the Philippines owned by property development firm Ayala Land Inc. Opened in 2007, the mall is located on the side of Epifanio de los Santos Avenue (EDSA), near the North Avenue MRT Station in Quezon City, giving significant market competition to the nearby SM City North EDSA as one of the largest malls in Manila's metropolitan area.

<http://en.wikipedia.org/wiki/TriNoma>



U.P. – Ayala Land TechnoHub

The U.P. – Ayala Land TechnoHub is an information and technology park or an economic zone for information and technology related business locators. It is located in near Philcoa in Quezon City, along Commonwealth Avenue within the University of the Philippines Diliman Campus. This technology park is a partnership between the University of the Philippines and Ayala Land - a subsidiary of Ayala Corporation, to utilize the idle property of the university. It is adjacent to the U.P. Arborretum, a forest and protected area near the Triangle Park. The techno hub is an off-shoot



of the previous partnership between the university and the corporation through the Ayala IT Park which is located at the southern boundary of the university along Katipunan corner C.P. Garcia Avenue.

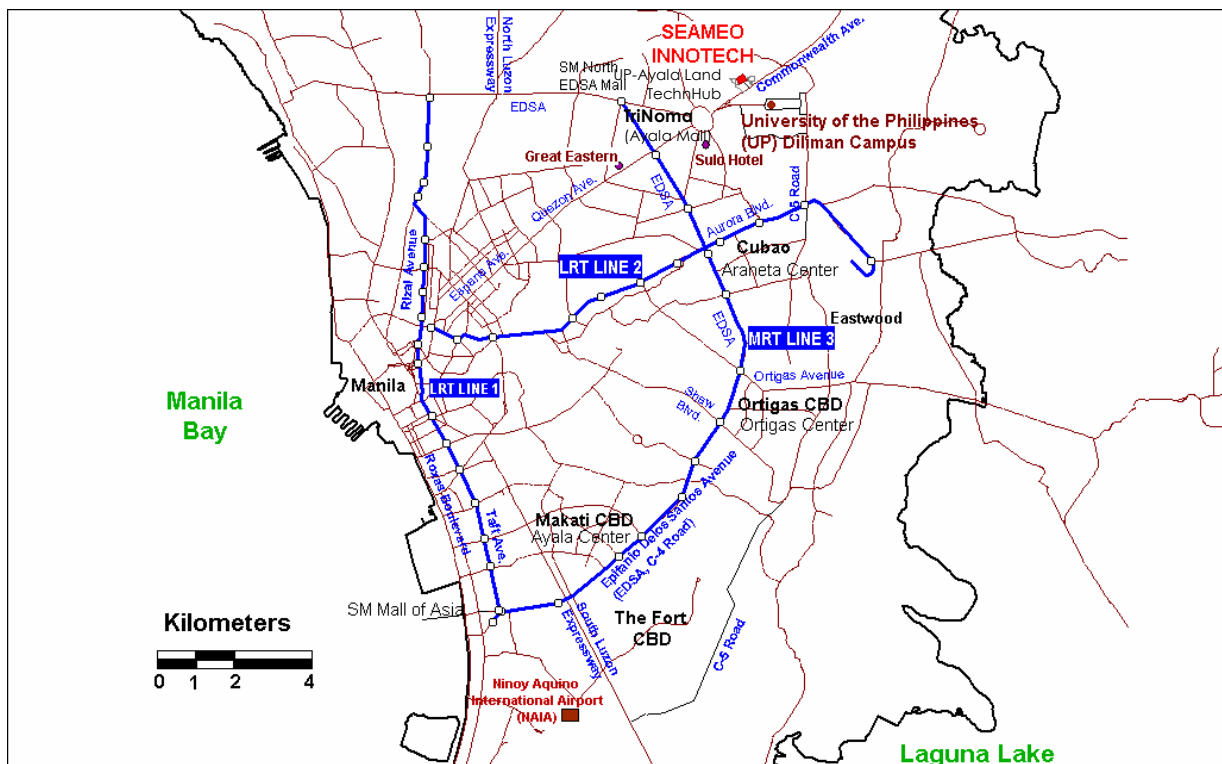
<http://webx.up.edu.ph/~sio/upnewsletter.php?i=771>

http://en.wikipedia.org/wiki/U.P.-Ayala_Land_TechnoHub

7. LOCATION OF THE SYMPOSIUM VENUE

Location of SEAMEO INNOTECH With Respect to Major Transportation Stations/CBD

Transport Terminal/CBD	Approximate Distance	Estimated Travel Time	Transport Mode
Ninoy Aquino International Airport (NAIA)	22 km	60 minutes	car/taxi (via C-5 Road or EDSA, C-4)
MRT Line 3 Quezon Avenue Station	3.5 km	10 minutes	car/taxi
Ortigas CBD	9.5 km	15-20 minutes	jeepney/FX taxi
		40 minutes	MRT Line 3 (Quezon Avenue to Ortigas Station) taxi to and from stations
Makati CBD	15.4 km	30 minutes	car/taxi
		60 minutes	MRT Line 3 (Quezon Avenue to Ayala Station) taxi to and from stations



Site Map of Ninoy Aquino International Airport (NAIA),
Symposium Venue (SEAMEO-INNOTECH) and UP Diliman Campus