

## **Poon Thiengburanathum, Ph.D.**

**Title** - Assistant Professor

Civil Engineering Department, Faculty of Engineering,  
Chiang Mai University, Chiang Mai, Thailand, 50200

Tel: 66 53 944165 ext 123

E-mail: [poon@eng.cmu.ac.th](mailto:poon@eng.cmu.ac.th)

### **Education**

1995	B.Eng.	Civil Engineering, Chiang Mai University
1997	M.S.	Construction Management, University of Colorado at Boulder
2003	Ph.D.	Construction Management, University of Colorado at Boulder Minors: Operation Research and Transportation Engineering
2003	M.S.	Transportation Engineering, University of Colorado at Denver

### **Roles and Experiences**

1998 – 2006	Design and Site Engineer
1998 – Present	Lecturer at Civil Engineering Department, Chiang Mai University, Chiang Mai, Thailand
1999 – 2003	Research Assistant and Teaching Assistant University of Colorado at Boulder
2003	Research Assistant at University of Colorado at Denver, Ramp metering design for highway I-25, Denver, Colorado
2004 – 2006	Quality Manager Representative, Biogas Technology Center, Chiang Mai University
2005 – 2006	Head of Business Development, Biogas Technology Center, Chiang Mai University
2005 – 2010	Secretary of Transportation and Logistics Research Units, Chiang Mai University
2006 – 2010	Assistant Director of Energy Research and Development Institution (ERDI), Chiang Mai University
2010 - Present	Head of Sustainable Infrastructure Development and Climate Change (CCI) Research Unit, Science and Technology Research Institute, Chiang Mai University
2011 - Present	Formal Mae Hong Son Municipality Advisor
2012 - Present	Formal Chiang Mai Municipality Advisor in Transportation Planning
2012 - Present	Technical Advisor, Chiang Mai Land Transportation Management Committee

- 2013 - Present Formal Lumphoon Municipality Advisor in Old City Conservation Program
- 2015 - Present Director of Urban Study and Public Policy Excellent Centre, Chiang Mai University
- 2015 - Present Lead Coordinator of Research University Network (RUN) for Climate Change and Disaster Management

### **Social Services**

- 2004 - Present Advisor, Voluntary Club for Engineer Students, Faculty of Engineering, Chiang Mai University
- 2004 - Present Advisor, Scuba Diving Club, Chiang Mai University
- 2015 - Present Founder, Steering Committee, Kubachaw Srivichai Foundation
- 2009 - 2010 Royal Service, Developer and Contractor for Main Building, Ban Malong Police Border School, Mae Jam District, Chiang Mai
- 2011 - 2012 Royal Service, Developer and Contractor, for Main Building, Ban Pakache Police Border School, Omkoy District, Chiang Mai
- 2013 - 2015 Royal Service, Developer and Contractor, for Main Building, Nongklam Police Border School, Chiang Doa District, Chiang Mai
- 2013 - 2015 Royal Service, Designer, Developer and Contractor, for New School, Ban Bo Num Sapee Police Border School, Pagmapa District, Mae Hong Son
- 2014 - Present Steering Committees of Chiangmai Public Transits Reforming Project - Red Cap Initiative, Military Circle 33
- 2014 - Present Social Engagement - Haze Reduction Program Green Majam, Chiang Mai University

### **Research Experiences**

#### *Transportation and Logistics Sector*

- 2003 *Guest Instructor* “Traffic Impact Assessment,” University of Colorado at Boulder
- 2003 *Modelling Expert* “Bus Rapid Transit in Chiang Mai: Feasibility Study: Bus Operation Model” *Master Plan of Chiang Mai’s Mass Transportation Project*, OTP
- 2004 *Demand Analyst* “Master Plan of Chiang Mai Transportation System: Chiang Mai as an Aviation Hub Scenario,” OTP

- 2004 *Project Leader* “Traffic Impact Analysis of A New Parking Building of The Maharaj Nakorn Chiang Mai Hospital” Chiang Mai Municipality
- 2004 *Project Leader* “Implementation Plan of Bus and Bike System in Chiang Mai: A Practical Viewpoint,” Chiang Mai Municipality”
- 2006 – 2007 *Researcher* “The Study of Logistics System of Thailand-Chinese Trade in the Context of ASEAN-China FTA: A Case Studies of Border and Transit Trades,” That Research Fund (TRF)
- 2007 *Project Leader* “The Study of Logistics Infrastructure, Impacts Assessment, and Value-Chain of East-West Economic Corridor (EWEC),” PDG Report, That Research Fund (TRF)
- 2007 *Researcher* “Feasibility Assessment and Relocation Analysis of Chiang Mai Bus Terminal and Potential of Logistics Hub,” Chiang Mai Province
- 2007 *Transportation Researcher/Urban Economist* “Urban Planning Development and Community-Based Protection Plan for Phayao, Phrae, and Nan Provinces” NHA
- 2007 *National Consultant* “Enhancing the Development Effectiveness of the Greater Mekong Sub Region (GMS) Economic Cooperation Program: A logistics benchmark study of the East-West Economic Corridor (EWEC),” ADB , TA-6262 (REG)
- 2007 *Assistant Analyst for Scenario Analysis and Policy Development* “Special Truck Routes and Administrative System for Linking with Intermodal Transport System,” OTP
- 2009 *National Consultant* “Urban Transportation Assessment for Secondary Cities Thailand,” World Bank.
- 2006 *Technical Expert,* “Energy Efficiency Improvement in Thailand Transportation Sector,” Federal of Thailand Industries (FTI).
- 2010-2011 *Project Leader* “Increasing Energy Efficiency in Transport Business” The Federation of Thai Industries and Energy Policy and Planning Office, Ministry of Energy.
- 2010-2011 *Project Leader* “Red Cap Route and System Management” Energy Policy and Planning Office, Ministry of Energy.
- 2011 *Project Leader of Transportation section* “Clean Air for Smaller Cities in the ASEAN Region” GIZ
- 2011 *Project Leader* “Development Design and Feasibility for Implementing Chiang Mai Bus Management” Thai Research Fund (TRF).
- 2011 *Technical Expert* “Logistics and Transport Management; LTM” Energy Policy and Planning Office, Ministry of Energy.

- 2012-2013 *Project Leader* “Integrated Land-Use Logistics and Transport Management; LTM” Chiang Mai Municipality and World Bank, Grant # TF099285.
- 2012-2013 *Scenario Analyst and Modeller* “Synthesising the Impact of Thailand’s Logistics Infrastructure Management and Supply Chain Redesign within the context of the ASEAN Economic Community (AEC), Phase I ” Thai Research Fund (TRF).
- 2013-2015 *Scenario Analyst and Modeller* “Synthesising the Impact of Thailand’s Logistics Infrastructure Management and Supply Chain Redesign within the context of the ASEAN Economic Community (AEC), Phase II ” Thai Research Fund (TRF).
- 2013-2015 *Project Director and Logistics Experts* “Disaster Management for Critical Logistics and Supply Chain Infrastructures” Thai Research Fund (TRF)
- 2014-2015 *Project Director* “Toward Green Logistics and Incentive Policy for Agriculture Supply Chain in Thailand” Thai Research Fund (TRF)

#### *Renewable Energy and Climate Change Sector*

- 2004 – 2006 *Deputy of Project Leader* “Implementation of Biogas Technology for Livestock (Large Farm)”, EPPO
- 2005 – 2007 *Project Leader* “Small Scale of Biogas System for Rice Noodle Factory, Phrae, Thailand,” ITAP Project, NNSTDA
- 2004 – 2007 *Project Leader* “Small Scale of Biogas System for Tofu Factory, Chiang Mai, Thailand,” ITAP Project, NNSTDA
- 2006 – 2007 *Project Leader* “Hybrid Biogas System for Palm Oil Factory, Trang, Thailand,” Biogas Technology Center, Chiang Mai University.
- 2006 - 2008 *Project Leader* “Biogas System for Fish Processing: Factory, Pacific Fish Processing Co. Ltd, Songkhla, Thailand,” Biogas Technology Center, Chiang Mai University and NSTDA
- 2007 *Project Leader* “Small Scale of Biogas System for Rice Whisky Distillery, Lamphoon, Thailand,” ITAP Project, NNSTDA
- 2007 – 2009 *Project Leader* “The Development of Biogas Purification System,” EPPO
- 2007 – 2009 *Project Leader* “The Development of Co-Digestion / Mixed Waste System in Thailand ,” EPPO
- 2007– 2009 *Project Leader* “Modified Biogas System for Wastewater from Ethanol Factory, Kanjanaburi, Thailand,” Thai Sugar Mill Ltd.
- 2007– 2009 *Project Leader* “Implementing Hybrid Biogas System for Different Palm Oil Factories in Thailand,” ERDI.

- 2008 – 2010 *Project Leader* “Thailand Small Scale CDM Swine Waste Management Programme,” World Bank and ERDI
- 2009-2010 *Project Leader* “Design and Implementing Small Scale Biogas System for Swine and Human Manure” Faculty of Engineering, Chiang Mai University.
- 2012-2013 *Project Leader* “Design and development of risk assessment model for cities in Thailand and decision support system for climate change adaptation: Phase 1 – prototype development and proof of concept,” Thai Research Fund (TRF).

*Urban Development, Decision Science, and Construction and Infrastructure Engineer Sector*

- 2003 *Guest Instructor* “Discrete-Event Simulation for Construction Production System Design” University of Colorado at Boulder
- 2004 *System Analyst/Project Coordinator* “Feasibility Study of Flood Protection System of WiangKumKam, Chiang Mai”
- 2004 *Advisor* “Lean Production and Logistic Management of Concrete Pipe Supply-Chain” IPUS
- 2004 - 2005 *Project Leader* “Product and Process Design of Wall Products for Non-Manufacturing Base: Life Cycle Assessment/Life Cycle Cost Approach” National Housing Authority (NHA), Thailand
- 2004 -2005 *Researcher* “Design of Passive Cooling/Heat House: Building Envelope and Ventilation,” EPPO
- 2005 *Researcher* “Innovation Survey and Economic Analysis for Chiang, Thailand” JICA
- 2005 - 2006 *Project Leader* “Production System Design and Implementation of Appropriated Construction Materials for Rural Area: A Case Study of Northern Region” National Housing Authority (NHA), Thailand
- 2005 *Researcher* “Feasibility and Strategic Analysis for Water Diversification System of Uthaithanee Province by Using Renewable Energy, Thailand, Uthaithanee Province.
- 2006 - 2007 *Researcher* “Site Selection and Development Feasibility of Industrial Estate for Mai Sod, Tak, Thailand, Tak Province.
- 2007 *Project Leader* “A Rapid Construction of A Sample of Northern Style Housing by Using Appropriated Construction Materials: A Case Study of Bangkok Site” National Housing Authority (NHA), Thailand
- 2007 *Project Leader* “Strategic Assessment of Elementary Information of Hollow Structure Section in Thai Construction

- Industry,” Samchai Steel Industries Public Company Limited, Thailand
- 2008 – 2009 *Project Leader* “Development of Housing and Urban Plan for Mae Hong Son, National Housing Authority (NHA), Thailand
- 2008 – 2009 *Project Leader* “System Design and Implementation of Appropriated Construction Materials for Rural Area: A Case Study of Northern Region (Phase 2)” National Housing Authority (NHA), Thailand
- 2009 *Project Leader* “Appropriated Design and Treatment Applying Bamboo as A Construction Method Material” Thailand’s National Science and Technology Development Agency (NSTDA).
- 2009 *Project Leader* “Conceptual Design and Feasibility for Implementing Living Museum in the Mae Hong Son City, Thailand” Thai Research Fund (TRF).
- 2010 *Researcher* “Water Resource Management of Chiang Mai Province” Faculty of Engineering, Chiang Mai University.
- 2010 *Researcher* “Water turbine for Supporting Energy Use in Community” Chiang Mai Province and Chiang Mai University.
- 2010-2011 *Project Leader* “Living Museum in the Mae Hong Son City, Thailand” Thai Research Fund (TRF).
- 2011 *Project Leader* “System Design for Infrastructure of Organic Rice Farm” iTAP, Thailand’s National Science and Technology Development Agency (NSTDA).
- 2010-2011 *Researcher* “Environmental Impact Assessment: EIA study of Bueng Sri Fai, Pijit Province” Department of Water Resources.
- 2011-2013 *Project Manager and Analyst* “Study of Chiang Rai Master Plan Development” Chiang Rai Province and Chiang Mai University.
- 2012-Present *Project Leader* “Chiang Rai Climate and Urban Scenario Model toward Resilience City,” Thai Environment Institute (TEI).
- 2013-2014 *Project Leader* “Urbanisation Scenario Planning : Chiang Mai City,” Thai Environment Institute (TEI).
- 2013-2014 *Project Leader* “Implementing BIM for Fast Track and Modular Construction,” PPSN, Ltd.
- 2013-2014 *Project Director* “Public Consultation for Thailand Flood Protection Plan Scenario Planning in Northern Area,” Chiang Mai University.
- 2014-Present *Project Advisor* “Capacity Building in Housing and Urban Development for Chiang Mai, Lumphoon, Lumpang, and Mae Hodgson, National Housing Authority (NHA).

## Selected Publications

- Thiengburananatham, P. and Diekmann, J. (2002) “Design of Construction Operation: Framework and conceptual model,” Information Technology in Civil Engineering Symposium, ASCE, November 3-7.
- Thiengburananatham, P. Wang, Y., Diekmann, J., and Molenaar, K. (2003), “Production Scheduling in Construction,” 2nd International Conference on Innovation in Architecture, Engineering and Construction, June 25-27
- Thiengburananatham, P. and Diekmann, J. (2003) “The taxonomy of construction production systems,” Joint International Symposium of CIB Working Commissions, Oct 22-24.
- Thiengburananatham, P. and Diekmann, J. (2003) “Design of construction operation: earthmoving system,” Joint International Symposium of CIB Working Commissions, Oct 22-24 (Best Paper Award)
- Thiengburananatham, P. and Assawamartbunlue, K. (2003) “Life-Cycle Assessments of Chiang Mai Dwellings: Life Cycle Cost, Comfort Zone, and Environmental Impacts,” Thai Life-Cycle Assessment (LCA), Workshop and Seminar, 2003, Chiang Mai, Dec 22-23.
- Thiengburananatham, P., Chatsirikul, U., Supriyasilp, T. (2004) “Rapid Production Strategies: Using Flow Synchronization for Modular Construction Systems,” The 9th National Convention on Civil Engineering, Thailand, May 19-21.
- Thiengburananatham, P. and Kasemsontitum, B. (2004) “The Conceptual Framework of Non Customer Size Based Approach for Solving Vehicle Routing Problem with Time Windows.” IE Network Conference, Chiang Mai, Thailand, October 20-22.
- Thiengburananatham, P., Kongboontiam, P, and Udomsri, R. (2004). “A Stochastic Market Clustering Air Travel Demand Forecasting Model: Chiang Mai as Aviation Hub Scenarios” The 2<sup>nd</sup> National Transport Conference, Bangkok, Thailand, November 26. (Best Paper Award)
- Thiengburananatham, P , Lieorungruang, V, Bhromsiri, A, & Wattanthariya , W. (2006). “ Sustainable Supply Chain of Construction Products And Materials: A Case Study of Natural – Fiber Cement Wall Product ” Reprinted from Chian Mai University Journal Vo. 5 No. 2 May – August 2006.
- Thiengburananatham, p., (2006) “ Alternative Construction Material As A Key Strategy Toward Sustainable Society: A Case Study Of Natural Flber Cement Products ” The 11th National Convention on Civil Engineering, 20-22 April 2006, Phuket ,Thailand
- Thiengburananatham, p, & Lucksiri, K, ( 2006 ) “ Assessments of Non – Load Bearing Wood Subject To Uniform Lateral Loadings ” The 11th National Convention on Civil Engineering, 20-22 April 2006, Phuket ,Thailand
- Santiteerakul S., Thiengburananatham T., Ramingwong S. (2007) “On Potential Analysis for Northern Thailand Clusters: Industry, Frontier and Logistics Based”, Thai LCA Conference, 15-16 March, Chiang Mai
- P.Thiengburananatham, R. Banomyong, K. Pattamaroj, and S. Kumagai. (2014) , “Geographical Simulation Modelling for Logistics Infrastructure Evaluation

System : ASEAN Economic Community Model, Proceedings of the 2014 Winter Simulation Conference

- Friend, R., Choosuk, C., Hutanuwatr, K., Inmoung, Y., Kittitornkool, J., Lubregts, B., Promphakping, B., Thiengburanathum, P., Thingpanga, P., and Siriwattanaphaiboon, S. “Urbanising Thailand : Implications for climate vulnerability assessments” Working Paper Series 30:2016, iied, Rockefeller Foundation, ACCCRN, and TEI

### **Teaching/Researching Areas:**

- CE 2514451 *Construction Management and Techniques*
- CE 251452 *Construction Estimation and Cost Engineer*
- CE 264710 *Operation Research for Construction Management*
- CE 264704 *Decision Making Analysis in Construction Management*
- CE 264709 *Strategic and Risk Management*
- CE 264733 *Infrastructure Planning and Management*
- IE 268xxx *Logistics Modelling and Optimisation*
- IE 268711 *Logistic System for Social Development*
  
- *Sustainable Projects and Climate Change*: life-cycle assessment, energy saving building, Clean Development Mechanism, renewable energy project development
- *Production system design*: operation research and optimisation, design variables and constraints approach, policy and objective design.
- *System modelling*: discrete-event simulation, meta-heuristic search, processes and supply chain, financial model.
- *Knowledge management and Decision science*: decision making and support system, cross-impact-analysis
- *Transportation and Logistic modelling*: Mass Transit model, Multi-Criteria Modelling for Route/Mode Selection

### **Rewards - Recognition :**

- *Best Paper Award* Thiengburananathum, P. and Diekmann, J. (2003)” Design of construction operation: earthmoving system,” Joint International Symposium of CIB Working Commissions, Oct 22-24
- *Best Paper Award* Thiengburanathum, P., Kongboontiam, P, and Udomsri, R. (2004). “A Stochastic Market Clustering Air Travel Demand Forecasting Model: Chiang Mai as Aviation Hub



Scenarios” The 2nd National Transport Conference, Bangkok, Thailand, November 26

- *Outstanding Research Award (2012) for Local Development. Living Museum in the Mae Hong Son City, Thailand” Thai Research Fund (TRF).*
- *Outstanding Research Topic from Research University Network (RUN) 2016. “Supply-Chian Redesign for Haze Reduction in Thailand”*