

# JARS

**Journal of Architectural/Planning Research and Studies | Volume 13 Issue 2. 2016**

## **13(2). 2016**

วารสารวิจัยและสาระสถาปัตยกรรม/การผังเมือง ปีที่ 13 ฉบับที่ 2. 2559

**JOURNAL OF ARCHITECTURAL/PLANNING RESEARCH AND STUDIES I VOLUME 13 ISSUE 2. 2016**

Copyright © 2016 by

Faculty of Architecture and Planning, Thammasat University, Rangsit Campus

Khlong Luang, Pathumthani 12121, Thailand

Tel: 66-2-986-9606 Fax: 66-2-986-8067

<http://www.tds.tu.ac.th/jars>

E-mail: JARS@ap.tu.ac.th

JARS Published bi-annually:

JARS 13(1) September - October 2016

JARS 13(2) November - December 2016

ISSN 1905-2022

Printed and bound by

Thammasat Printing House, Pathumthani 12121, Thailand

Tel: 66-2-564-3111 Fax: 66-2-564-3119

Statements or facts and opinions appeared in JARS are made on the responsibility of the author alone and do not imply the endorsement of the publisher.

All researches and studies are available online at <http://www.tds.tu.ac.th/jars>

# Editorial Board

## Executive Honorable Advisors:

Professor Vimolsiddhi Horayangkura, Ph.D.  
Associate Professor Nipan Vichiennoi, Ph.D.  
Associate Professor Chalermwat Tantasavasdi  
Associate Professor Dr. Yongtanit Pimonsathean  
Assistant Professor Pimonmart Wankanapon, Ph.D.  
Assistant Professor Santirak Prasertsuk  
Daranee Jareemit, Ph.D.

## Editor-in-Chief:

Associate Professor Pawinee lamtrakul, Ph.D.

## Editorial Board:

Professor Ivo Martinac, Ph.D.  
School of Architecture and the Built Environment  
KTH Royal Institute of Technology, Sweden

Professor Jelena Srebric, Ph.D.  
Department of Mechanical Engineering  
The University of Maryland, College Park, MD, USA

Professor Mike Jenks, Ph.D.  
School of Architecture,  
Oxford Brookes University, UK

Professor Pichai Taneerananon, Ph.D.  
Department of Civil Engineering,  
Prince of Songkla University, Thailand

Professor Bill Hillier  
The Bartlett School of Graduate Studies,  
University College London, UK

Professor Kamthorn Kulachol  
Faculty of Architecture, Kasetsart University, Thailand

Professor Peter G. Rowe  
Graduate School of Design,  
Harvard University, USA

Associate Professor Dr. Bundit Limmeechokchai  
Sirindhorn International Institute of Technology (SIIT),  
Thammasat University, Thailand

Associate Professor Siriwan Silapacharanan, Ph.D.  
Faculty of Architecture, Chulalongkorn University, Thailand

Assistant Professor Rawiwan Oranratmanee, Ph.D.  
Faculty of Architecture, Chiang Mai University, Thailand

Associate Professor Vira Inpuntung, Ph.D.  
Faculty of Architecture, Silpakorn University, Thailand

Associate Professor Chatri Prakitnonthakan  
Faculty of Architecture, Silpakorn University, Thailand

Francis Duffy, Ph.D.  
DEGW, London  
Visiting Professor, Massachusetts Institute of Technology, USA

Torwong Chenvidyakarn, Ph.D.  
SC Asset Corporation Plc., Thailand

Associate Professor Awiroot Srisutapan  
Assistant Professor Dr. Peeradorn Kaewlai  
Assistant Professor Sukulpat Khumpaisai, Ph.D.  
Assistant Professor Chomket Sawangjaroen  
Archan Boonyanan, Ph.D.  
Jaturong Pokharatsiri, Ph.D.  
Kritaporn Haocharoen, Ph.D.  
Manat Srivanit, Ph.D.  
Siriporn Kobnithikulwong, Ph.D.  
Siwaporn Klinmalai, Ph.D.  
Winyu Andruga, Ph.D.

## Copy Editor:

Apinya Hemawannagoon

## Graphic Designer:

Panudda Rodsattru

## Information Technology and Website:

Athitaya Ruangrunghchaikul

## Editorial Secretary:

Pimwadee Eomthurapote

# Editorial

We would like to present the 2<sup>nd</sup> issue, volume 13 of our Journal of Architectural Research and Studies (JARS). This peer-reviewed journal was a collection of recent research developments in a very wide range of the built and social environmental dimensions from theoretical aspects to application-based studies. This issue contains 6 articles from both architecture and planning dimensions which can be listed as the following topics:

- Enhancing adaptation to climate change by impact assessment of the flood in bangkok;
- Analysis of drainage capacity and flood risk areas for integrated urban planning of Sam Khok district, Pathumthani Province;
- Structural equation models for building awareness and acceptance of public participation in Thailand's comprehensive urban planning procedures;
- Participatory action research in promoting safe bike to school;
- Negotiation in design: participatory process in designing healthcare facilities of public hospital;
- Guidelines on promotion of the public space potential in the old district of Nakhon Ratchasima city.

Furthermore, topic of "Zero Energy Buildings" was discussed as the review article by Assistant Professor Dr. Chanikarn Yimprayoon. The book Urban Acupuncture written by Jaime Lerner, an architect/urban planner turned Brazilian politician was also reviewed by Assistant Professor Nij Tontisirin and included in this issue.

Finally, we thank all of you who have kindly continually supported and contributed to our journal over the years and we are grateful to the authors, external reviewers of the manuscripts and editorial staffs for their continued advice and supports. We trust you will again enjoy this issue and wish you all a Happy New Year 2017.



Associate Professor Pawinee IAMTRAKUL, Ph.D.  
Editor-in-Chief

# Contents

- 1 บทความปริทัศน์: อาคารใช้พลังงานเป็นศูนย์  
Review Article: Zero Energy Building  
Chanikarn Yimprayoon
- 31 Enhancing Adaptation to Climate Change by Impact Assessment of the Flood in Bangkok  
การเสริมสร้างการปรับตัวจากการเปลี่ยนแปลงภูมิอากาศโดยการประเมินความเสียหายจากน้ำท่วมกรุงเทพมหานคร  
Wijitbusaba Ann Marome
- 41 การวิเคราะห์ความสามารถในการระบายน้ำของคลอง และพื้นที่เสี่ยงภัยน้ำท่วมเพื่อการจัดทำผังเมืองรวมชุมชน  
สามโคก อ.สามโคก จ.ปทุมธานี  
Analysis of Drainage Capacity and Flood Risk Areas for Integrated Urban Planning of Sam Khok  
District, Pathumthani Province  
Haruetai Moskong and Chatchai Jothityangkoon
- 57 Structural Equation Models for Building Awareness and Acceptance of Public Participation in Thailand's  
Comprehensive Urban Planning Procedures  
แบบจำลองการสร้างการรับรู้และการยอมรับต่อกระบวนการมีส่วนร่วมของประชาชนในการจัดทำผังเมืองรวมและ  
การพัฒนาเมือง  
Chaweewan Denpaiboon and Pornchai Jantaworn
- 69 การวิจัยเชิงปฏิบัติการแบบมีส่วนร่วมในการส่งเสริมการขี่จักรยานไปโรงเรียนอย่างปลอดภัย  
Participatory Action Research in Promoting Safe Bike to School  
Pondej Chaowarat, Suphathida Sawangchaeng and Methee Piriyakarnnon
- 85 Negotiation in Design: The Participatory Process in Designing Healthcare Facilities of a Public Hospital  
ต่อรอง/ออกแบบ: กระบวนการมีส่วนร่วมในการปรับสภาพแวดล้อมของโรงพยาบาลในสังกัดของรัฐบาล  
Soranart Sinuraibhan, Tanasi Samphantharak Petyim, Saithiwa Ramasoot, Supreeya Wungpatcharapon, Kuanchai Kakaew  
and Prowpannarai Mallikamarl
- 99 แนวทางที่ส่งเสริมศักยภาพของพื้นที่สาธารณะในเมืองเก่านครราชสีมา  
Guidelines on Promotion of The Public Space Potential in the Old District of Nakhon Ratchasima City  
Nithi Lisnund

## Book Review

- 123 Urban Acupuncture  
Nij Tontisirin and Sutee Anantsuksomsri

