

JARS

Journal of Architectural/Planning Research and Studies | Volume 13. Issue 1. 2016

13(1).2016

วารสารวิจัยและสาระสถาปัตยกรรม/การผังเมือง ปีที่ 13 ฉบับที่ 1. 2559

JOURNAL OF ARCHITECTURAL/PLANNING RESEARCH AND STUDIES I VOLUME 13. ISSUE 1. 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

With great pleasure, we would like to present our latest issue of the ***Journal of Architectural/Planning Research and Studies (JARS)*** of the Volume 13, Issue 1 which is predominantly contributed to the architectural design and planning with its emerging issues and technologies. Six articles have been conducted to cope with the Global warming effect which has been a serious issue for decades. The first article is to examine ways for integrating impact of the natural environment and typical urban morphological features on the thermal load into urban climate planning using spatially distributed information of local atmospheric zones (LAZs). The second article is to improve the energy conservation in building by recommend the reduction of outdoor air temperature by using materials of high heat capacity property and shade from vegetation which can shield materials with low heat capacity. The third article aims to review the developments of climate responsive building skins in term of solar shading device and to propose the innovation of automatically adjustable sun louvers with real-time solar tracking systems, which can be an ideal part of the “green” architectural solution affordable for every single household. The next article is also one of the technological oriented applications by comparing the traditional method and the use of technology portable personal computer in the process of making a village map and in the process of an architectural measure works. Follow by the fifth article, the non-motorized transportation routes inside Sri Nakhon Khuean Khan Park and the surrounding area was studied and recommended as a guideline for improvement and development of their physical features in order to promote walking and cycling with multi-modal transport. The final article reflects the value of cooperative, multidisciplinary and multicultural learning mixing the expertise and values of various stakeholders to work to a built outcome through Bower Sala project as described as ‘live’ projects within the ‘design/build’ format by concentrating on links between technologies and specific cultural norms. Furthermore, not only this exclusive collection represents research findings on various issues of architectural practice and research fields, but also a book of “Parallax by Steven Holl” was reviewed about the work of one of the world’s most famous architects by Assistant Professor Santirak Prasertsuk.

We once again hope that this collection of articles will be a valuable resources for researchers and practitioners in area of architecture design and planning. Finally, we would also like to express our gratitude to all contributions from the authors and external reviewers of the manuscripts for their continued support.



Associate Professor Pawinee Iamtrakul, Ph.D.

Editor-in-Chief

Contents

- 1 การจำแนกความคล้ายเชิงพื้นที่ทางความเสถียรเชิงความร้อนพื้นผิวเพื่อกำหนดความแตกต่างของเขตบรรยากาศประจำถิ่นในเมืองเชียงใหม่
Classifying Spatial Homogeneity of Thermally-Stabilized Surface to Define Differentiation Local Atmospheric Zones in Chiang Mai City
Manat Srivanit and Sudarat Auttarat
- 23 The Impact of Site Elements to Micro-Climate Air Temperature
ผลกระทบขององค์ประกอบรอบที่ตั้งต่ออุณหภูมิอากาศ ในเขตภูมิอากาศเฉพาะพื้นที่
Wuttigarn Puraprom
- 35 พัฒนาการและนวัตกรรมของอุปกรณ์แผงกันแดดภายนอกอาคารเพื่อสถาปัตยกรรมที่สอดคล้องกับสภาพภูมิอากาศ
Development and Innovation of Exterior Shading Devices for Climate Responsive Architecture
Srisak Phattanawasin and Prittiporn Lopkerd
- 49 การเปรียบเทียบวิธีการแบบดั้งเดิมและแบบการใช้เทคโนโลยีคอมพิวเตอร์ส่วนบุคคลแบบพกพาในกระบวนการสำรวจหมู่บ้าน
A Comparison of the Traditional Method and the Use of Technology Portable Personal Computer in the Process of Village Survey
AmaresThepma, Terdsak Techakritkachorn and Settawut Bamrungkhul
- 61 Non-Motorized Transportation in and around Sri Nakhon Khuean Khan Park, Samut Prakan
การเดินทางไม่ใช้เครื่องยนต์กับการเข้าถึงสวนศรีนครเขื่อนขันธ์ จังหวัดสมุทรปราการ
Waralak Khongouan and Satida Sakulrattanakulchai
- 75 Bower Sala 08 Revisited: Lessons for Community-Based Live Projects
โครงการ ‘ศาลา 08’ กับการกลับไปเยี่ยมอีกครั้ง: บทเรียนสำหรับโครงการออกแบบชุมชนที่มีชีวิต
David O'Brien and Boonanan Natakun

Book Review

- 91 Parallax
Santirak Prasertsuk

