



Vietnamese-German University



**AURA**

Asian Urban Research Association

ABSTRACT PROCEEDINGS OF

# AUC2019

15<sup>th</sup> INTERNATIONAL ASIAN URBANIZATION CONFERENCE

**URBAN FUTURES:  
CRITICAL TRANSFORMATIONS IN ASIAN CITIES**

27-30 November 2019

Vietnamese-German University, Binh Duong, Vietnam



# **AUC2019**

**“URBAN FUTURES: CRITICAL TRANSFORMATIONS IN ASIAN CITIES”**

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# Welcome to Vietnamese-German University!

Dear colleagues and guests,

On behalf of the Local Organiser's Committee, we warmly welcome you all to the 15th Asian Urbanisation Conference (AUC 2019) held on 28 – 30 November 2019, Binh Duong, Vietnam with the topic: "Urban Futures: Critical Transformation in Asian Cities".

This year's topic fits well to the moment when Vietnam is preparing our 10 years development plan, together with national urban development strategy for sustainable development. It is critical time we plan to transform our growth model process towards greener, smarter, and more resilient after several decades of fast urbanization. We believe that many other developing countries in Asia are also facing with similar issues.



It is honored for us to organize such a conference in Vietnamese-German University. We expect that we will provide opportunities for you to share your latest knowledge and experience, to network, and to collaborate for our better futures.

We would like to sincerely thank all participants, session chairs, keynote speakers, and Local Committee members for their valuable contribution to this conference.

A handwritten signature in black ink, appearing to read 'H. Thuc Vien'.

Ha Thuc Vien

Vice President of Vietnamese-German University  
Chairman of Local Organising Committee

## Preface

Although cities, metropolitan areas, megapolitan regions, and urban areas constantly undergo transformations, one may argue, particularly with respect to issues of climate change, that we are truly at a critical juncture, and thus the conference theme “Urban Futures: Critical Transformations in Asian Cities” is especially appropriate. One year ago, the Intergovernmental Panel on Climate Change (IPCC) issued a 700-page report warning that we have just 12 years to make massive and unprecedented change in the ways we live in order to limit global warming to more moderate levels and to prevent the most devastating impacts. Given this we are truly at a critical pivot point in terms of how, as urbanists, city planners, urban managers, and scholars, we societally consume and manage resources. There are dire implications for how we mitigate and adapt to climate change. Other transformations are be reaching critical junctures, too. For example, revolutions in computing technologies and programming are enabling “smart cities” as we have only imagined. Also, income polarization brought on through globalization has implications for housing affordability. Across these and other issues, planners must make pivotal choices with long range implications. Indeed, demographically, it has been roughly three years since Asia crossed the psychological threshold of having more people living in urban areas than not. The conference theme then, is as fitting for this time as for any other.



Another critical transformation is reflected by changes in this conference series itself. The initial conference was organized in 1985 by four Asianists, each with a focus on cities, urbanization, and planning, at the University of Akron in the United States. On the heels of that successful conference, a conference series slowly evolved under the leadership of Dr. Ashok K. Dutt, with increasing regularity and in a variety of venues. That first conference, along with one in London (1997) and Athens, Georgia, USA (2003), were organized in venues that were obviously not Asian, were less accessible, whether in terms of cost or distance, to Asian based scholars and practitioners. Indeed, early on, participation for many modestly resourced individuals – notably those most directly engaged in studying, planning, and living in Asian cities – was prohibitively costly, thus effectively shutting out those scholars and practitioners who perhaps had both the most to contribute and the most to gain from the participation in the conference. In a sense, conference series itself has undergone a “critical transformation,” that leaves it incredibly accessible to scholars from a wide variety of institutions and geographic settings and, in effect, participation has been democratized. The efforts of incredibly capable local organizers in easily reachable venues and a modest, multiple tier registration system have been instrumental in this transformation to a conference series that features and mixes both “bottom up” grass-roots scholarly participation from a wide range of institutions with respected expert participants from across the globe.

The mission of this conference and earlier iterations of the Asian Urbanization Conference series is to promote the “exchange of views and experiences on cities, metropolitan areas, urbanization, and closely related social, economic, political, and environmental issues in the Asian context” and to facilitate a “dialogue that shares research, planning, and problem-solving.” The program of this 15th Asian Urbanization Conference, the abstracts herein, and most critical of all, the participants themselves, gives confidence to the idea of this mission being successfully accomplished.

Prof. Dr. George Pomeroy, Professor, Shippensburg University

## Acknowledgement

We would like to thank all colleagues and friends to contribute to this event. This conference and longevity of the conference series, the resultant proceedings volumes, and related publications are testament to tremendous capability, capacity, and leadership skills of the local organizers. For this 15th Asian Urbanization Conference, the team of local organizers at the Vietnamese-German University (VGU) has demonstrated extraordinary diligence, focus, and careful coordination for nearly two years. Countless hours have been dedicated in planning, conceptualization, funding, and execution of the conference.

Dr. Ha Thuc Vien, VGU Vice-President and Chairman of Local Organizing Committee (LOC), along with Dr. Nguyen Ngoc Hieu and Dr. Le Thi Thu Huong provided conference planning leadership over two years ago. With Dr. Vien serving as chair, they organized a large team and careful plan of action. Additional members of the local organizing committee include Assoc. Prof. Dr. Pham Van Song – Vice Chairman of LOC, Dr. La Vinh Trung, Dr. Pham Thai Son, Dr. Vu Anh Tuan, and Dr. Nguyen Viet Long. A four-member Conference Secretariat played a key role. The Secretariat, led by Dr. Trung, was additionally comprised of Tran Thuan Anh, Tran Hoang Nam, and Kieu Thi Le.

The Scientific Board provided excellent feedback on abstracts and submitted papers. Leading members not already mentioned include Assoc. Prof. Rini Rachmawati (Gadjah Madah University), Dr. Diganta Das (National Institute of Education of Singapore), Dr. B.R.K. Sinha (Banaras Hindu University), Prof. Dr. Le Anh Duc (Ho Chi Minh City College of Construction), Dr. Le Thi Hong Na (Ho Chi Minh City University of Technology), Dr. Ngo Le Minh (Ton Duc Thang University), and Dr. Nguyen Luu Bao Doan (Ho Chi Minh City University of Economics).

The conference is especially fortunate in having a peerless set of four featured speakers including Dr. Michael Douglass (Professor Emeritus of both the University of Hawaii-Manoa and the National University of Singapore) and Dr. Debnath Mookherjee (Professor Emeritus, Western Washington University) have made leading scholarly contributions for decades. Prof. Dr. Hans-Joachim Linke (Technical University of Darmstadt), and Dr. Nguyen Quang (Manager of UN Habitat-Vietnam) are leading scholars conducting cutting edge research in the region of Southeast Asia.

Conference support and sponsorship is greatly appreciated. Leading sponsors include Becamex IDC Corp., Vietnamese-German University, Technical University of Darmstadt, Shippensburg University, SEANNET (Southeast Asia Neighborhoods Network), and both the Regional Development and Planning and Asian specialty groups of the American Association of Geographers. Organizing a conference is challenging work and financial support is vital to addressing the reality of costs.

Finally, any conference is only as successful if it draws active, engaged scholars. Thank you for your sharing your research, expertise, a willingness to engage and network, and your presence at the occasion of the 15th Asian Urbanization Conference.

# Main Agenda



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NOV

TIME	ACTIVITY	NOTE
07:00 - 07:10	Depart from Ho Con Rua (Probably arrive at 08:30)	First departure from Ho Con Rua
08:15 - 09:00	Registration	Lobby
09:00 - 09:45	Opening ceremony: Performance (10'), MC (5') AURA (10'), VGU (10'), Binh Duong (10')	Plenary hall
09:45 - 10:45	Key note speeches	Plenary hall
10:45 - 11:15	Group photos & Tea-break	Plenary hall
11:15 - 12:30	Presentation session 1	8 rooms
12:30 - 13:45	Lunch	Boxes (lobby)
13:45 - 15:00	Presentation session 2	8 rooms
15:00 - 15:30	Tea-break	Lobby
15:30 - 17:00	Special session on Smart City (Binh Duong and Becamex IDC)	Plenary hall
17:15	Depart to Ho Con Rua	Final drop-off at 18:45

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NOV

TIME	ACTIVITY	NOTE
07:15 - 07:20	Depart from Ho Con Rua (Probably arrive at 08:45)	First departure from Ho Con Rua
09:00 - 10:30	Special session on Vietnam Urbanisation Strategy towards 2030	Plenary hall
10:30 - 10:45	Tea-break	Lobby
10:45 - 12:00	Presentation session 3	8 rooms
12:00 - 13:15	Lunch	Boxes (Lobby)
13:15 - 14:30	Presentation session 4	8 rooms
14:30 - 14:45	Break	Lobby
14:45 - 16:00	Presentation session 5	8 rooms
16:00 - 16:15	Tea-break	Lobby
16:15 - 17:15	Closing ceremony: Summary report (20'), Awards (15') Hand over (10'), Thanks giving (15')	Plenary hall
17:15	Photo for organisers & guests	Plenary hall
18:00	Gala dinner	Gala hall
19:45	Depart to Ho Con Rua	Final drop-off at 21:00

## Program Schedule

THEME 1 (ROOM 1 & ROOM 3)					
#	Time	Code	Title	Author	Room
Day 1: 28th November, 2019					
R1-T1-S1: 11:15 - 12:30 (Chaired by George Pomeroy)					
1	11:15 - 11:40	152	Need of Understanding Disaster Risk for Resilient City Development	Mumita Tanjeela	1
2	11:40 - 12:05	10	Climate Change and Sea Level Rise Response Solutions for Can Gio District, Ho Chi Minh City: Experiences from Developed Countries of the World	Ngo Le Minh	1
3	12:05 - 12:30	242	Slum Communities Persevere for Water Supply in Summers	Siddharth Agarwal	1
R1-T1-S2: 13:45 - 15:00 (Chaired by Ha Thuc Vien)					
4	13:45 - 14:10	11	Climate Migrants in the Dhaka Metropolitan Region: The Process of Livelihood Adaptation	Anwar Hossain	1
5	14:10 - 14:35	217	Cope with Climate Change of Urban Women in Ho Chi Minh City	Nguyen Thi Minh Thu	1
6	14:35 - 15:00	143	Understanding Urban Heat Island Effects and Its Implications to Household Energy Consumption and Public Health in Southeast Asian Cities: Evidences from Thailand and Indonesia	Sigit Arifwidodo	1
Day 2: 29th November, 2019					
R1-T1-S3: 10:45 - 12:00 (Chaired by Pham Van Song)					
7	10:45 - 11:10	83	Urban Sustainability and Urban Resilience Indicators: Preliminary Framework for a Methodology to Combine both Approaches in a Common Indicator Set	Audrey Bourgoin	1
8	11:10 - 11:35	236	Application of Artificial Intelligence to Predict the Mapping of Flood Prone Areas in the Bantul Regency, Yogyakarta	Aditya Wisnugraha Sugiyarto & Achmad Ramadhanna'il Rasjava	1
9	11:35 - 12:00	166	Architectural Solutions with regards to Climate Change for the Rural housing of Vinh Long Province in Vietnam	Le Thi Hong Na	1
R1-T1-S4: 13:15 - 14:30 (Chaired by Pham Van Song)					
10	13:15 - 13:40	116	The Effect of Urban Vegetation Pattern on Land Surface Temperature in Bangkok Metropolitans	Mingkwan Nantavisai	1
11	13:40 - 14:05	237	Building Adaptability under Climate Change Condition for Mekong Delta in Vietnam	Le Trung Phong	1
12	14:05 - 14:30	243	Urban Vegetable Gardening Brings Greening to Slum Environment and Helps Mitigate Climate Change Effects	Siddharth Agarwal	1
R1-T1-S5: 14:45 - 16:00 (Chaired by La Vinh Trung)					
13	14:45 - 15:10	200	Potential Areas for Vertical Garden: A Case Study of Shophouses' Facade in the inner City of Da Nang, Vietnam	Kieu Thi Le	1

14	15:10 - 15:35	40	Review on Green Infrastructure Approach in Urban Flood Management and Its Possible Application in Binh Duong Province	Tran Nguyen Thien An	1
15	15:35 - 16:00	118	Stakeholder Analysis Framework and Ongoing System Review for the Possibility of Green Infrastructure Application into Hanoi Urban Storm Water Management	Doan Thi Thao Linh	1
<b>R3-T1-S6: 13:15 - 14:30 (Chaired by Ian Green)</b>					
16	13:15 - 13:40	8	Climate Change and Cities in Mekong Delta - Viet Nam	Vu Thi Hong Hanh	3
17	13:40 - 14:05	87	Urban Flood in the Context of Climate Change in Ho Chi Minh City: A Case Study of Nha Be District	Ngo Le Minh	3
18	14:05 - 14:30	93	Vulnerability and Flood Risk Analysis for Urban Area - A Case Study of Ho Chi Minh City	Pham Van Song	3
<b>THEME 2 (ROOM 2)</b>					
#	Time	Code	Title	Author	Room
<b>Day 1: 28th November, 2019</b>					
<b>R2-T2-S1: 11:15 - 12:30 (Chaired by Mike Douglass)</b>					
1	11:15 - 11:40	16	Consensus, Agonistic, and Participate Planning in Structural Equation Model	Detchat Niyomtrong	2
2	11:40 - 12:05	72	Governance Characteristics of Dhaka City for Ensuring Implementation of Land Use Planning	Musfera Jahan	2
3	12:05 - 12:30	185	Enhancing Physical Activity by Governing Public Spaces - A Case Study of Chirag Delhi Ward	Lakshya Yog	2
<b>R2-T2-S2: 13:45 - 15:00 (Chaired by Nguyen Ngoc Hieu)</b>					
4	13:45 - 14:10	80	Convivial Cities: Alternative to Cities of Consumers	Balbir Singh Butola	2
5	14:10 - 14:35	153	Tribes at the Margin of Tribal Space: An Inquiry into Urban Spatial Exclusion	Bipin Kumar	2
6	14:35 - 15:00	126	Urban Planning in Vietnam: Why Gender Matter	Le Dinh Phuoc	2
<b>Day 2: 29th November, 2019</b>					
<b>R2-T2-S3: 10:45 - 12:00 (Chaired by Diganta Das)</b>					
7	10:45 - 11:10	13	Collaborative Approach for Resource Mobilization Transformation in Vietnam	Nguyen Ngoc Hieu	2
8	11:10 - 11:35	98	Beating the Traffic: Civil Society Participation in Transport Reforms and Innovations	Gina Rocafort Gatarin	2
9	11:35 - 12:00	168	A Framework to Assess Community Indicator Systems: Bringing Conceptual Clarity to Research and Policies on Neighborhood 'Quality of Life'	Ate Poorthuis	2
<b>R2-T2-S4: 13:15 - 14:30 (Chaired by George Pomeroy)</b>					
10	13:15 - 13:40	145	Agriculture Transformation towards Urbanization	Nguyen Thi Minh Dieu	2
11	13:40 - 14:05	227	Neoliberalism, Urban Corruption and Impacts on the Poor: The Case of Durban in South Africa	Brij Maharaj	2
12	14:05 - 14:30	24	Information Economy, Employment Vulnerability and the Emergence of New Urban Marginality in Dhaka City, Bangladesh	Rasel Hussain	2

R2-T2-S5: 14:45 - 16:00 (Chaired by Liliana Dumitrace)					
#	Time	Code	Title	Author	Room
13	14:45 - 15:10	133	Slum Children-youth Groups Demonstrate Zest, Collective Confidence and Tenacity to Improve Access to Education and Self-development Opportunities	Kanupriya Kothiwala	2
14	15:10 - 15:35	135	Assessing and Overcoming Social Challenges: Utilizing Slum Community's Inherent Wisdom and Persevering with Problem Solving Efforts	S. Agarwala	2
15	15:35 - 16:00	134	Inclusive Urban Governance Approach in Indian Cities	S. Verma	2
THEME 3 (ROOM 3)					
#	Time	Code	Title	Author	Room
Day 1: 28th November, 2019					
R3-T3-S1: 11:15 - 12:30 (Chaired by Nguyen Thanh Tu)					
1	11:15 - 11:40	206	The Impact of E-Mobility on Greenhouse Gas Mitigation in Vietnam	An Minh Ngoc	3
2	11:40 - 12:05	130	A Transportation Optimization Model for solving the Single Delivery Truck Routing Problem with the All different Constraint in MS Excel	Dinh Hai Dung	3
3	12:05 - 12:30	221	Enhancing Urban Mobility through Motorcycle Lane System - An Empirical Study in Ho Chi Minh City	Vu Anh Tuan	3
R3-T3-S2: 13:45 - 15:00 (Chaired by An Minh Ngoc)					
4	13:45 - 14:10	204	A Study on Pedestrians' Unsafe Crossing Behavioral intention at Signalized Intersections in Vietnam	Vuong Xuan Can	3
5	14:10 - 14:35	160	An Elicitation Study on Potential Users' Salient Beliefs of Using Future City Light Rail Transit	Reynaldo Siahaan	3
6	14:35 - 15:00	235	Effect of BRTS on NMT Users in Ahmedabad	Sarath Kuttikkatuparambil Thilakan	3
Day 2: 29th November, 2019					
R3-T3-S3: 10:45 - 12:00 (Chaired by Nguyen Quang)					
7	10:45 - 11:10	209	Policies and Measures to Create Efficient and Low-Carbon Transport in Urban Area: Case Study in Hochiminh City	An Minh Ngoc	3
8	11:10 - 11:35	216	Motorcycles in a Long-term Perspective: Case of Ho Chi Minh City	Nguyen Thanh Tu	3
9	11:35 - 12:00	207	Policy Implications for Natural Gas Vehicle Development in Vietnam	An Minh Ngoc	3
THEME 4 (ROOM 4 & PLENARY HALL)					
#	Time	Code	Title	Author	Room
Day 1: 28th November, 2019					
R4-T4-S1: 11:15 - 12:30 (Chaired by Ha Thuc Vien)					
1	11:15 - 11:40	37	Property Rights and Street Vending: The Bangkok Case	Chaitawat Boonjubun	4
2	11:40 - 12:05	54	Transformations in Land Management	Phan Hai Ho	4
3	12:05 - 12:30	90	Could Waqf Land Contribute Resolving Urban Problems? The Case of Bangkok	Sefer Kahraman	4

R4-T4-S2: 13:45 - 15:00 (Chaired by Hans-Joachim Linke)					
#	Time	Code	Title	Author	Room
4	13:45 - 14:10	79	GIS and Fuzzy Logic Approach for Providing Land Value Information: A Case Study in Hanoi City	Doan Quang Cuong	4
5	14:10 - 14:35	44	Historical Urban Growth and Multi-seasonal Land Cover Classification of Dhaka: An Approach Using Google Earth Engine	Chandana Mitra	4
6	14:35 - 15:00	111	Analyse the Transformation of Spatial form of Tan Quy Dong Flower Village - Sa Dec City, Dong Thap Province, Vietnam	Huynh Trong Nhan	4
Day 2: 29th November, 2019					
R4-T4-S3: 10:45 - 12:00 (Chaired by Phan Trung Hien)					
7	10:45 - 11:10	205	A Study on the Ecological Balance Capacity of Hanoi Green Corridor	Le Quynh Chi	4
8	11:10 - 11:35	71	Mapping the Initiatives for Risk Sensitive Land Use Planning for the Dhaka City	Musfera Jahan	4
9	11:35 - 12:00	103	Transitioning to Renewable Energy: How Much Land Will Vietnam Need by 2030?	Tran Thuc Han	4
R4-T4-S4: 13:15 - 14:55 (Chaired by Mika Hyotylainen)					
10	13:15 - 13:40	211	Determine the Purpose of Land Acquisition for Economic Development in Vietnam to Ensure a Balance between Public and Private Interests	Phan Trung Hien	4
11	13:40 - 14:05	113	Collective Land Ownership Works as an Alternative: A Case From China	Sa Haoxuan	4
12	14:05 - 14:30	7	Institutional Challenges in Managing Urban Land Development in Peripheral Area of Ho Chi Minh City	Tran Hoang Nam	4
13	14:30 - 14:55	78	Unlocking the Status quo of Waterfront Wnclosures in Turku, Finland: Redevelopment, Appropriation, and Public Policy	Jani Vuolteenaho	4
Plenary-T4-S5: 15:10 - 16:00 (Mika Hyotylaine and Panel)					
14	15:10 - 15:30		Thinking About Alternatives and Tribute to Prof. Dr. Anne Haila	Mika Hyotylainen	Plenary Hall
15	15:30 - 16:00		Panel discussion (Mike Douglass, Hans-Joachim Linke, George Pomeroy, Ha Thuc Vien, Nguyen Quang)	Mika Hyotylaine and Panel	
THEME 5 (ROOM 5 & ROOM 8)					
#	Time	Code	Title	Author	Room
Day 1: 28th November, 2019					
R5-T5-S1: 11:15 - 12:30 (Chaired by Rini Rachmawati)					
1	11:15 - 11:40	229	Smart City in Asia Developing Country - Binh Duong Vietnam Case Study: Suitable Plan and Actual Implementation	Nguyen Viet Long	5
2	11:40 - 12:05	214	Think Globally, Act Locally: The Challenges of Attracting Creative Class People to Ho Chi Minh City	Pham Thai Son	5
3	12:05 - 12:30	163	Evaluating Public Spaces in the Peri-urban Areas of Hanoi in the Urbanization Process (From 2008 up to now). Comparative Studies in Three New Wards of Hanoi (Vietnam)	Ta Quynh Hoa	5

R5-T5-S2: 13:45 - 15:00 (Chaired by Le Thi Thu Huong)					
4	13:45 - 14:10	67	Future of Prospective Smart Cities outside Metro Manila	Christine Joyce Mendoza	5
5	14:10 - 14:35	42	Smart Cities: Progress and Challenge in Establishing Livable Cities	Rini Rachmawati	5
6	14:35 - 15:00	101	Challenges in Developing and Implementing Smart City in Palangka Raya	Fikri Rafif	5
Day 2: 29th November, 2019					
R5-T5-S3: 10:45 - 12:00 (Chaired by Hans-Joachim Linke)					
7	10:45 - 11:10	94	Is Linh Dam Still a Liveable New Town? And How to Make it Work Again?	Nguyen Quang Minh	5
8	11:10 - 11:35	46	Sustainable Buildings for People - Enhancing Urban Quality of Life in Cambodia	Michael A. Waibel	5
9	11:35 - 12:00	233	Core Value of Urbanization in the Condition of Building up to the Smart City has the Good Quality of Life for Citizens - The Case Study of Hochiminh City, Vietnam	Ha Thi Lien	5
R5-T5-S4: 13:15 - 14:30 (Chaired by Michael A. Waibel)					
10	13:15 - 13:40	120	Evolutionary Livability of New Urban Areas in Hanoi: From Plan(ning) to Market(ing)	Tran Minh Tung	5
11	13:40 - 14:05	171	Evaluation of Urbanites' Perception about Livable City Using Analytic Hierarchy Process (AHP): A Case Study of Dhaka City	Raisa Sultana	5
12	14:05 - 14:30	38	Management of Public Space towards Livable city: The Case of Hanoi, and Lessons from Singapore	Nguyen Lien Huong	5
R5-T5-S5: 14:45 - 16:00 (Chaired by Rini Rachmawati)					
13	14:45 - 15:10	157	Utilization of Personnel Management Information System (SIMPEG) Application to Support E-Government in the Personnel, Education and Training Agency (BKPP) at Palangka Raya Municipality	Puja Dania Almira	5
14	15:10 - 15:35	149	Developing Smart and Sustainable Campus in Singapore	Nathaniel Lim & Aravind	5
15	15:35 - 16:00	109	Online Real Time (ORT) Waste Management through "Si Detektif Sampah" Application in Implementing Smart City in Palangka Raya City	Haddad Al Rasyid Sukawan	5
R8-T5-S6: 13:15 - 14:30 (Chaired by Pham Thai Son)					
16	13:15 - 13:40	199	Urban Resilience and Inclusion of Smart Cities in the Transformation Process for Sustainable Development: Critical Deflections on the Smart City of Bhubaneswar in India	Biswajit Das	8
17	13:40 - 14:05	31	Migration: An Element of Smart Livable Cities	Braj Raj Sinha	8
18	14:05 - 14:30	18	Digital Addressing of Historical City Morphology: The Case of Lalitpur City in Kathmandu Valley, Nepal	Krishna Poudel	8
R8-T5-S7: 14:45 - 15:35 (Chaired by Le Anh Duc)					
19	14:45 - 15:10	1	A Comparative Analysis of City Development Policies regarding Healthy, Livable and Sustainable Communities in Europe and Asia	Ana-Maria Talos & Liliana Dumitrache	8
20	15:10 - 15:35	41	Smart and Connected Healthcare: Integrating Health and Health Care into the Smart City Concept: Opportunities, Challenges and Barriers	Liliana Dumitrache	8

THEME 6 (ROOM 6)					
#	Time	Code	Title	Author	Room
Day 1: 28th November, 2019					
R6-T6-S1: 11:15 - 12:30 (Chaired by Nguyen Quang)					
1	11:15 - 11:40	29	Travel Behavior of Transit-Oriented Development (TOD) Neighbourhood Residents: A Study of Two Neighbourhoods in Shenzhen China	Zhu Qian	6
2	11:40 - 12:05	241	Re-structuring Urban Space of Hanoi City on the Basis of Urban Mass Transit Development	Nguyen Thi Thanh Mai	6
3	12:05 - 12:30	239	Urbanisation vis-a-vis Environmental Pollution: An Overview of Metro Cities in India and Abroad	Gautam Kumar Basu	6
R6-T6-S2: 13:45 - 15:00 (Chaired by Yves Boquet)					
4	13:45 - 14:10	188	Metropolisation in France and Its risks What Experience to Enhance Asian - European Common Exchange?	Philippe Grall	6
5	14:10 - 14:35	148	Urban Migrant Labour: Public Spaces and Social Integration (Review on Studies in Vietnam)	Pham Quynh Huong	6
6	14:35 - 15:00	115	Adaptive Strategies of Roadside Informal Business in response to Local Development Authority's Policy.	Zaima Promy	6
Day 2: 29th November, 2019					
R6-T6-S3: 10:45 - 12:00 (Chaired by Ian Green)					
7	10:45 - 11:10	173	Urbanization and Spaces of Marginalization in Relation to the Golden Quadrilateral Highway Project and Diamond Quadrilateral Railway Project in India	Vijay Kumar Baraikfl	6
8	11:10 - 11:35	2	Airports and Metropolitan Development in East and Southeast Asia	Yves Boquet	6
9	11:35 - 12:00	25	Lack of Integrated Planning in Tribal People Development - An Action Plan to Save Nilgiris Tribe	Ar. Krithika. R & Sharmila Jagadisan	6
R6-T6-S4: 13:15 - 14:55 (Chaired by Yves Boquet)					
10	13:15 - 13:40	144	Dependent Urbanization and Underdevelopment in Haryana: A Geographical Analysis	Naresh Kumar	6
11	13:40 - 14:05	158	Ho Chi Minh City's Urban Structure Historical Review Through the Residential Environments and Quality of Life	Nguyen Thi Ngoc Giang	6
12	14:05 - 14:30	231	Community Consultation in Drainage Planning, Flood Proofing, and Climate Change Adapting: Case of the Mekong Delta	Animesh Halder	6
13	14:30 - 14:55	230	Community Consultation in Drainage Planning, Flood Proofing, and Climate Change Adapting: Case of the Mekong Delta	Pham Quynh Huong	6
THEME 7 (ROOM 7)					
#	Time	Code	Title	Author	Room
Day 1: 28th November, 2019					
R7-T7-S1: 11:15 - 12:30 (Chaired by Sigit Arifwidodo)					
1	11:15 - 11:40	57	Upgrading Slums in India	Braj Raj Kumar Sinha	7
2	11:40 - 12:05	125	Slums and Squatter Settlements and Affordable Housing in the Dhaka Metropolitan Area	Nurul Islam Nazem	7
3	12:05 - 12:30	23	Informality in the Southern City; An Enquiry into Informal Practices in Housing	Ruhamah Thejus	7

R7-T7-S2: 13:45 - 14:35 (Chaired by Pham Thai Son)					
#	Time	Code	Title	Author	Room
4	13:45 - 14:10	107	Status of Elementary Educational Facilities in Slums across Different States of India	Prabhakar Nishad	7
5	14:10 - 14:35	244	Design Research on Sustainable and Affordable Housing for Viet Nam	Ngo Le Minh	7
Day 2: 29th November, 2019					
R7-T7-S3: 10:45 - 12:00 (Chaired by Mike Douglass)					
6	10:45 - 11:10	108	Concepts, Status, and Progress of Affordable Housing in Urban India	Braj Raj Kumar Sinha	7
7	11:10 - 11:35	213	Social Housing Development in Ho Chi Minh City, Vietnam: From Policy to Practice	Pham Thai Son	7
8	11:35 - 12:00	61	Urban Low-Income Housing in Thailand, Reflection of Thai Democratization. The Case of 'We Care Housing Project' and 'Secure Housing Project'	Kitapatr Dhabhalabutr	7
R7-T7-S4: 13:15 - 14:05 (Chaired by Le Thi Hong Na)					
9	13:15 - 13:40	59	Urban Housing Policy in India: An Evaluation of Ashiana Scheme in the Planned City of Panchkula, Haryana, India	Sheena Chadha	7
10	13:40 - 14:05	180	Intergenerational Perspective on Right to the City in relation to Changing Nature of Social Contracts in the Slums of South Delhi.	Swagata Basu	7
THEME 8 (ROOM 8)					
#	Time	Code	Title	Author	Room
Day 1: 28th November, 2019					
R8-T8-S1: 11:15 - 12:30 (Chaired by Le Thi Thu Huong)					
1	11:15 - 11:40	121	A New Inner-Hanoi via Residentializing Old Industrial Facilities: From Urban Renewal to Reurbanization, and Urban Regeneration	Tran Minh Tung	8
2	11:40 - 12:05	22	From Welfare to Participation - The Changing Narratives of Slum Rehabilitation and Housing for the Urban Poor in Delhi	Ushosee Pal	8
3	12:05 - 12:30	176	Public Participation and Urban Renewal Project in District 8, Ho Chi Minh City: Do We Know What Works?	Ha Minh Tri	8
R8-T8-S2: 13:45 - 15:00 (Chaired by Nguyen Luu Bao Doan)					
4	13:45 - 14:10	198	Comparative Study of the Patterns and Characteristics Urban Morphology of the Old City, Bengkulu and Singapore that has relation to Historical Background	Fitrianty Wardhani	8
5	14:10 - 14:35	99	Breakthrough to Promote the Urban Economy of Vietnam Urban System in the Forthcoming Period	Nguyen Quoc Toan	8
6	14:35 - 15:00	48	Studying Urban Expansion and Landscape surrounding Monuments for Conservation the World Cultural Heritage in Hue City - View from GIS and Remote Sensing	Dinh Thi Dieu	8
Day 2: 29th November, 2019					
R8-T8-S3: 10:45 - 11:35 (Chaired by Ngo Le Minh)					
7	10:45 - 11:10	15	Conceptual Solutions for the Renewal of Unused Open Spaces: Case Study of Ho Chi Minh City, Vietnam and Bangkok, Thailand	Le Thi Thu Huong	8
8	11:10 - 11:35	85	How Far It Reaches? Examining the Notion of Resilience Travelling through the Process of Planning to Practices - Two Waterfront Resilient Projects in the Central District of Taichung, Taiwan	Peiwen Lu	8

# AUC2019 Abstracts

## THEME 1

Day 1: 28th November, 2019

R1-T1-S1: 11:15 - 12:30 (Chaired by George Pomeroy)

1	152	Need of Understanding Disaster Risk for Resilient City Development	Mumita Tanjeela
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*Dr. Mumita Tanjeela, East West University, Dhaka, Bangladesh*

*Md. Anisur Rahman, Urban Research Initiatives (URI), Dhaka, Bangladesh*

Rapid urbanization has been a common phenomenon in most developing countries. Asia is no exception. Many of the major cities in the Asian region are fast growing but without proper physical planning guidelines. For instance, development is taking place on areas which are prone to risk from natural hazards and could be seen as a serious concern. With a view to reduce damage and resilient development, Sendai Framework on Disaster Risk Reduction (SFDRR) has emphasized on understanding disaster risk. This paper has tried to understand the current situation in Asian cities with regard to resilient development. Publicly available data and information published, are used to understand the development patterns of the major cities in Bangladesh, Myanmar and Thailand. This research finds that Asian cities are at a very early stage to understand the disaster risk and climate change effects ahead of city planning and physical expansion. As a result of unplanned development without considering potential risk, citizens are becoming vulnerable to natural hazards. Therefore, it is important to understand the potential disaster risks and climate change impacts for resilient city development and for effective urban planning. The outcome of the paper will help in formulating policy guidance for the respective cases.

2	10	Climate Change and Sea Level Rise Response Solutions for Can Gio District, Ho Chi Minh City: Experiences from Developed Countries of the World	Ngo Le Minh
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*Le-Minh Ngo, Ton Duc Thang University, Ho Chi Minh City, Vietnam*

*Hai-Yen Hoang, Ho Chi Minh City University of Technology (HUTECH), Ho Chi Minh City, Vietnam*

Climate change is taking place more and more strongly in the world, with Vietnam being one of the most heavily affected countries. Ho Chi Minh City is on the list of 10 cities in the world most threatened by the risks associated with high sea level rise. According to the estimates of the United Nations, by 2100, the sea level will rise by more than 1 meter and nearly 20% of Ho Chi Minh City's area will be flooded. Therefore, finding solutions to respond to climate change in Ho Chi Minh City is very urgent in the current conditions. This research will evaluate climate change phenomenon in Ho Chi Minh City, particularly in Can Gio coastal district. It will then offer solutions to cope with climate change in this area. The proposed solutions include solutions for planning residential clusters and providing architectural design models for housing projects such as stilt houses, floating houses, lightweight concrete houses etc. Identifying the correct response to climate change related flooding in Ho Chi Minh City is the key for sustainable development in the future.

**Keywords:** Climate change, Sea level rise, Responding solutions, Can Gio District, Ho Chi Minh City

*Siddharth Agarwal, Urban Health Resource Centre, New Delhi, India*

*Kanupriya Kothiwal, Urban Health Resource Centre, Indore, India*

*Shabnam Verma, Urban Health Resource Centre, Indore, India*

*Neeraj Verma, Urban Health Resource Centre, Indore, India*

*Kailash Vishvakarma, Urban Health Resource Centre, Indore, India*

According to, NITI Aayog's (Government of India's National Institution for Transforming India) report, nearly 600 million people in India face extreme water stress. Slum populations face huge challenges in accessing water for basic needs. Through qualitative interviews with slum women, municipal authorities and frontline health workers study assesses the challenges, short term measures, coping mechanism and possible ways of improving water accessibility during summers in Indore's slums. Findings suggest that there is a high dependence among slum populations on private mechanisms for accessing water in summers along with adoption of other local, informal methods to access and store water. The study highlights the different ways in which slum communities negotiate with municipal authorities as well as private players to access general use water during summers. This research provides civil society organisations, municipal authorities, academia and other urban stakeholders of potential ways for to develop solutions towards equitable water provisions in the light of increasing water scarcity in India and LMICs.

**Keywords:** Water Scarcity, Summers, Slums, Climate change, India

R1-T1-S2: 13:45 - 15:00 (Chaired by Ha Thuc Vien)

4	11	Climate Migrants in the Dhaka Metropolitan Region: The Process of Livelihood Adaptation	Anwar Hossain
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*Nurul Islam Nazem, University of Dhaka, Dhaka, Bangladesh*

*A Q M Mahbub, University of Dhaka, Dhaka, Bangladesh*

*Md. Anwar Hossain, University of Dhaka, Dhaka, Bangladesh*

Bangladesh is one of the most vulnerable countries of the world due to climate change impact. This impact seems to be present all over the country. The cities and towns also face severe impacts. Dhaka, the capital of Bangladesh and one of the largest metropolitan regions in the world, is facing much of the adverse impacts of climate change, both directly and indirectly. Dhaka accommodates many internally displaced populations along with other impacts from the climatic hazards. In this context, the present research aims to explore the context of migration to Dhaka, as well as their adaptation strategies in the city due to climate change and environmentally induced problems. This study is based on the primary data collected from a large census of 12,078 migrant households, and then from the identified climate migrants, 553 sample households were randomly chosen from Dhaka Metropolitan Region. The study shows that 20.9 percent of migrant households in the city left their place of origin due to climate change induced factors. Immediately after migration, informal sector provides majority of the jobs, and these are mainly unskilled jobs. However, overtime they try to upgrade to more skilled sectors. More than two-thirds of the migrants enhanced their income level after staying long time in the city. However, some migrants even failed to secure their income at the level of what they used to earn in rural areas.

**Keywords:** Climate Change, Disaster, Migration, Adaptation, Dhaka

5	217	Cope with Climate Change of Urban Women in Ho Chi Minh City	Nguyen Thi Minh Thu
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*Nguyen Thi Minh Thu, Tran Khai Nguyen High School, Ho Chi Minh City, Vietnam*

*Nguyen Ha Bich Van, Tran Khai Nguyen High School, Ho Chi Minh City, Vietnam*

*Dam Duc Tai Tran, Tran Khai Nguyen High School, Ho Chi Minh City, Vietnam*

*Nguyen Phu Duy, Tran Khai Nguyen High School, Ho Chi Minh City, Vietnam*

Earth's climate change is a change of climate system including atmosphere, hydrosphere, biosphere, lithosphere, ice sheet in the present and future by natural and artificial causes. Urban women are affected by climate change every day. A survey to investigate factual situation was conducted in combination with in-depth interviews with 820 urban women and high school girls of 08 districts in Ho Chi Minh City, such as Le Hong School (District 5), Tran Khai Nguyen High School (District 5), Truong Vinh Ki Private High School (District 11), the Education and Training Center of Binh Tan District ...The results show that urban women have high awareness of climate change. More than 73% urban women "Totally agree" that coping with climate change is an important task for themselves. 61% urban women "Very often" follow up and update the climate situation and actively participate in responding to climate change in the locality. This article shows the cause, the reality of the problem and some solutions to increase the effectiveness of deal with climate change of urban women in Ho Chi Minh City, provide people with necessary information about the important role of urban woman in the green planet protection career.

**Keywords:** cope with, climate change, urban women

6	143	Understanding Urban Heat Island Effects and Its Implications to Household Energy Consumption and Public Health in Southeast Asian Cities: Evidences from Thailand and Indonesia	Sigit Arifwidodo
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*Sigit D. Arifwidodo, Kasetsart University, Bangkok, Thailand*

*Panitat Ratanawichit, Kasetsart University, Bangkok, Thailand*

*Orana Chandrasiri, International Health Policy Program, Nonthaburi, Thailand*

The study explores the effects of Urban Heat Island (UHI) to urban residents. Using two case studies in Bangkok, Thailand and Bandung, Indonesia, the study focuses on the effects of UHI to household energy consumption and health and well-being. A Survey questionnaire of 400 respondents from each city was employed. The household energy consumption was measured using a proxy variable of average monthly electricity consumption. UHI intensity is measured using cooling degree days (CDD) variable constructed from the temperature difference between urban and sub-urban weather stations. The perceived health effect is measured by heat stress, physical health impacts, mental health impacts and health and well-being outcomes. The data then are analyzed through descriptive and inferential statistics. UHI is found to have a positive association with the ownership of air conditioning equipment in Bangkok and Bandung and is found to increase the monthly electricity bill. It is also found that UHI has affected the daily lives of urban residents in terms of increasing household energy consumption for cooling and disruption of activities such as working, sleeping, and general health and well-being.

**Keywords:** Urban Heat Island, Household Energy Consumption, Health and Well-Being, Sustainable Urban Development, Bangkok, Bandung

7	83	Urban Sustainability and Urban Resilience Indicators: Preliminary Framework for a Methodology to Combine both Approaches in a Common Indicator Set	Audrey Bourgoin
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*Bourgoin, Audrey, TU Darmstadt, Darmstadt, Germany*

*Linke, Hans Joachim, TU Darmstadt, Darmstadt, Germany*

Urban sustainability (US) and urban resilience (UR) are two of the main approaches commonly used by cities, urban policy makers and scientists to adapt urban areas to future requirements. Indicator sets measuring multidisciplinary performance levels are fundamental to the evaluation of the status and progress of urban areas in the domains of either sustainability or resilience. Indicators enable indeed to agglomerate large amounts of complex and heterogeneous information in tangible and simplified values. The aim of this paper is to establish a first overview of the common points and differences between the notions of Urban Sustainability and Urban Resilience as well between the topics and sectors valued by each perspective. It will then investigate the characteristics of different indicator sets used to assess the performance of the studied factors in the domains and sectors valued by either UR or US.

This article also proposes a conceptual framework to define possible intersections and combinations between the concepts of UR and US using the example of the water supply sector.

**Keywords:** Urban resilience, urban sustainability, indicator, water supply

8	236	Application of Artificial Intelligence to Predict the Mapping of Flood Prone Areas in the Bantul Regency, Yogyakarta	Aditya Wisnugraha Sugiyarto
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*Aditya Wisnugraha Sugiyarto, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia*

*Achmad Ramadhanna'il Rasjava, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia*

Flooding is one of natural disasters that poses a serious threat to people who live near watersheds and coastal areas. Floods may affect various sectors of socio-economic life of a society, such as sectors of the economy, agriculture, and education. This led to the need for an accurate method for predicting flood-prone areas so the public and the government can prevent and minimize the negative impacts and able to assist the recovery process in the sectors affected by the floods more optimal. In the Industrial Revolution 4.0 era, science and technology develops very quickly, one example is the development of Artificial Intelligence (AI) where the system adopts the way of human thinking, such as planning, learning, reasoning, and self-correction which is then manifested in a mathematical form so it can be applied for solving real problems. Therefore, this study used the AI system in the process of prediction and mapping of disaster-prone areas. The data used in this study are rainfall, land altitude, watersheds, river depth, and distance of the settlement to the seashore or river. These data were then processed using the method of deep learning for prediction function and Fuzzy C-Means (FCM) for mapping function which is a technique in AI systems. The final results of this study were obtained three criteria

for disaster vulnerability, namely low, medium and high, which can be used to predict the mapping of flood-prone areas until the coming years in the Bantul Regency area.

**Keywords:** Floods Predictions, Floods Mapping, Disaster Mitigation, Artificial Intelligence, Deep Learning

9	166	Architectural Solutions with regards to Climate Change for the Rural housing of Vinh Long Province in Vietnam	Le Thi Hong Na
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*Le Thi Hong Na, Ho Chi Minh City University of Technology, Ho Chi Minh city, Vietnam*

*Dang Hai Dang, Ho Chi Minh City University of Technology, Ho Chi Minh city, Vietnam*

*Nguyen Dang Hoang Nhat Truong, Investment Promotion and Enterprise Support Center, Vinh Long, Vietnam*

In the Mekong River Delta, Vinh Long province is currently suffering from environmental consequences due to the effects of climate change such as sea level rise, saline intrusion, landslides, erratic floods, and thunderstorms. On the other hand, rural urbanization has negatively influenced the overall image of the rural social structure, of which, the culture, customs, habits and living conditions of the people and, especially, the morphology housing architecture of the area are all being affected. In this study, the status of rural housing architecture in Vinh Long is systematized and evaluated according to the criteria of sustainable architecture. Survey results show that nearly all of the rural house types in Vinh Long are suffering from the effects of climate change. Among the five types of Vinh Long rural housing, villas are the only ones not being affected by climate change. Traditional housing is a type not significantly affected by climate change. Street houses, however, are dealing with the effects of river erosion and high tides. In particular, pure-agricultural and simple housing are heavily affected by landslides, tidal surges, saline intrusion, and tornadoes. Based on the relationship with the characteristics of indigenous architecture, economic, social and environmental conditions of Vinh Long province, architectural solutions with regards to climate change have been proposed to improve the quality of life, to minimize the negative impacts on the environment and to meet the needs of future sustainable development.

**Keywords:** Climate change, rural housing, sustainable development

R1-T1-S4: 13:15 – 14:30 (Chaired by Pham Van Song)

10	116	The Effect of Urban Vegetation Pattern on Land Surface Temperature in Bangkok Metropolitans	Mingkwan Nantavisai
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*Mingkwan Nantavisai, Chulalongkorn University, Bangkok, Thailand*

*Danai Thaitakoo, Chulalongkorn University, Bangkok, Thailand*

Land cover and climate change leads to rising of land surface temperature and this affects human comfort. Many researches support that urban vegetation, known as green infrastructure, can reduce land surface temperature. However, there is no research determining how the spatial structure and pattern of urban vegetation affects land surface temperature. This research focuses on investigating the effects of urban vegetation pattern on land surface temperature by comparing among land cover classification maps, spatial pattern and land surface temperature contour maps. Eight areas which have similar land cover ratio but different spatial patterns have been selected. The results show that large vegetation patches reduce surface temperature better than small vegetation patches. A large vegetation patch has an ability to decrease surface temperature only in the patch itself, but built-up and bare soil areas that reside next to the green patch still obviously have high surface temperature. On the other hand, the maximum temperature of areas those compose of small vegetation patches is lower than the large patch. Overall, small scattered vegetation patches reduce the surface temperature not only on patch themselves but also in a wider area. It seems that small scattered vegetation patches benefit the urban areas in reducing land surface temperature more than a large vegetation patch. However, both large and small scattered vegetation patches should be combined for the best efficient of decreasing urban land surface temperature. This can be applied to a Bangkok's green infrastructure planning to improve quality of life for people and make the city more resilience.

**Keywords:** Urban Vegetation, Green Infrastructure, Land Surface Temperature, Spatial Pattern, Land Cover Classification

11	237	Building Adaptability under Climate Change Condition for Mekong Delta in Vietnam	Le Trung Phong
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*Le Trung Phong, Thuy loi University, Ha Noi, Vietnam*

Recently climate change has affected directly to the living condition of all households in Mekong delta of Vietnam. To be aligned with such so bad condition, people are trying to build more building with higher level to maintain all floors above the water level. However, when the tide is down, their building is not sufficient for such dry condition. In this research the author proposes a multipurpose building management to overcome such problems. Further people can change the manner to adapt such bad condition in Vietnam.

**Keywords:** Climate change, building management, tide down, multipurpose building, building adaptability

12	243	Urban Vegetable Gardening Brings Greening to Slum Environment and Helps Mitigate Climate Change Effects	Siddharth Agarwal
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*Siddharth Agarwal, Urban Health Resource Centre, New Delhi, India*

*Shabnam Verma, Urban Health Resource Centre, Indore, India*

*Neeraj Verma, Urban Health Resource Centre, Indore, India*

*Kailash Vishvakarma, Urban Health Resource Centre, Indore, India*

*Kanupriya Kothiwala, Urban Health Resource Centre, Indore, India*

Indian cities are growing with modern buildings, infrastructure for wealthier residents. Urban Health Resource Centre’s (UHRC) social facilitators encourage families to grow vegetables in small spaces in slum houses. Seeds were provided. Facilitators motivate families to tend plants as they grow. During 2018 – 2019, 495 families grew beans, bottle-gourds, round-gourds, sponge-gourds, tomatoes, brinjals, small green-peppers, pumpkins in small spaces, broken buckets. 495 families shared with 1485 neighbour families, thereby benefitting 9,900 population. Costs saved over the three years total to INR 8251932. Slum families can be motivated and overcome space constraints of small slum houses to nurture household vegetable gardens. Despite each home garden being small, these have the potential to mitigate carbon emissions a key climate change challenge affecting the world. Vegetable plants release oxygen and sequester carbon in the soil and reduce atmospheric carbon. Vegetable gardens contribute to cooling effect in urban spaces. Growing vegetables despite small spaces and sharing with neighbours promotes a sense of psychological well-being, accomplishment, and enhances social cooperation all crucial to well-being of vulnerable city populations. Home-based vegetable gardens save costs for the family. Methods used in this programme research to grow vegetables in small slum houses and other lessons learnt of perseveringly motivating slum families have the potential of their replication or adaptation in cities of India and other LMICs.

**Keywords:** household, vegetable-gardening, climate change mitigation, slums, India

R1-T1-S5: 14:45 - 16:00 (Chaired by La Vinh Trung)

13	200	Potential Areas for Vertical Garden: A Case Study of Shophouses' Façade in the Inner City of Da Nang, Vietnam	Kieu Thi Le
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*Le Thi Kieu, Vietnamese-German University, Binh Duong, Vietnam*

*Stefan Schäfer, Technische Universität Darmstadt, Darmstadt, Germany*

A lack of green space is a common issue found in dense urban areas. Cities with insufficient green areas expose themselves to multi-risks in environment, health, and last but not least economy. To deal with that issue, plants should grow not only on horizontal but also on vertical spaces due to limitation of land availability. Accordingly, Vertical Garden – a principle allows the unused vertical urban surfaces to be utilized – has been investigated regarding their improvement options for facades in built environments. To explore the potential of this solution in a certain urban area, this paper aims to study the maximum possible area that vertical gardens can cover as well as their various benefits to the neighborhood. A case study of shophouses' facades on a business street in Da Nang, Vietnam is provided. To achieve the objectives, the research questions concern the demand for green development of the studied neighborhood, potential areas to grow vertical gardens based on inventory analysis and values gained from the possible changes. Studying with mixed methods of data collection and analysis, the paper finds certain positive potentials for the development of vertical gardens in the studied area. These gardens can cover approximately 30% of the existing total façade area, equating to 17% of a total land area. This green coverage may bring multiple effects to the dense city including environmental, economic and social benefits.

**Keywords:** Vertical Garden, Façade, Vietnam

14	40	Review on Green Infrastructure Approach in Urban Flood Management and Its Possible Application in Binh Duong Province	Tran Nguyen Thien An
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*Tran Nguyen Thien An, Binh Duong Environmental Protection Agency, Binh Duong, Vietnam*

*Le Thi Thu Huong, Assumption University, Bangkok, Thailand*

The Green Infrastructure (GI) is a concept that incorporates vegetation, natural processes, and land-use into the built environment and it has been regarded as an effective intervention for storm-water runoff minimization in urban flood management. In the context of increasing flood in many cities of Vietnam, the paper has carried out an overall review on GI, its advantages and constraints in urban flood management, and then tried to identify the possibilities for applying in Binh Duong's urban areas. The literature review shows that GI can offer a multifunctional approach such as reducing storm-water runoff, improving water quality, mitigating the impacts of climate change, and maintaining healthy and sustainable communities. However, the practical utilization of GI in urban flood management is still overwhelmed by the traditional grey infrastructure such as roads, drainage pipe networks, and sewerage treatment or water treatment systems, etc. which generally offer low sustainability as shown in the literature. The main reasons are the uncertainties of GI hydrological performance, service delivery and lack of appropriated decision-making supports for its multiple-benefit assessment. From that, certain possibilities for applying GI in Binh Duong province are proposed through the review of the current situation on policy, authorities and communities awareness and the natural conditional of Binh

Duong. There is also a need for further studies on the technical deployment of the GI solutions through experiments as well as the methods and tools for its performance assessment in comparison with the traditional grey solutions.

**Keywords:** Green infrastructure, urban flood management, runoff-water, sustainable development, Binh Duong

15	118	Stakeholder Analysis Framework and Ongoing System Review for the Possibility of Green Infrastructure Application into Hanoi Urban Storm Water Management	Doan Thi Thao Linh
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*Doan Thi Thao Linh, University of Applied Sciences Cologne, Köln, Germany*

*Nguyen Thanh Tu, National University of Civil Engineering (NUCE), Hanoi, Vietnam*

Under the impacts of rapid urbanization and climate change, most of the big cities in Vietnam have encountered increasing incidences of heavy rainfalls and disruption of the hydrologic cycle, leading to frequent discharges of contaminated runoff, catastrophic flooding and inundation. In another incident, despite the fact that green infrastructure (GI) has always been among good alternatives to conventional engineering solutions worldwide, this concept (and measure) remains as a relatively new discourse in Vietnam water-infrastructure development. This paper focuses on exploring possibilities of GI application into urban stormwater management in Hanoi – the capital of Vietnam. In this regard, it would: First, introduce a comprehensive analysis of current status of stormwater management approach and performance of Hanoi; then propose a framework for integrating systematic stakeholder analysis and possible interventions to promote GI as a fundamental part of broader urban flood risk management plans. A qualitative approach had been adopted, using a literature review and semi-structured interviews. Preliminary results demonstrate that much of stormwater management efforts in Hanoi fall into traditional engineering solutions; while there is not enough concern for the adoption of GI. Twenty key stakeholders have been identified, classified and analysed in proposed systematic stakeholder framework; among which municipal departments can be recognized as the most important. Besides, the study also found out that the feasibility of GI application requires adequate education and consultation from other beneficiary groups. Last but not least, the success of the GI project likely depends on actively civil society engagement and proper cooperation with local government.

**Keywords:** Green Infrastructure, Stormwater management, Stakeholder analysis, Hanoi

R3-T1-S6: 13:15 - 14:30 (Chaired by Ian Green)

16	8	Climate Change and Cities in Mekong Delta - Viet Nam	Vu Thi Hong Hanh
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*Hanh Vu, University of Architecture Hochiminh City (UAH), Ho Chi Minh city, Vietnam*

*Hai Truong, University of Architecture Hochiminh City (UAH), Ho Chi Minh city, Vietnam*

Climate change is no longer an environmental problem but rather attached to the development of all places in the world, especially those that are strongly affected Mekong delta region in Vietnam. Like many other deltas in the world, has strong water-based characteristics, where living environment is strongly influenced by water, consequently receives worst impacts of climate change and sea level rise. Having important roles in economic development, food security and natural ecology of Vietnam, this delta has been received lots of international, national, and local attentions to seek ways to sustain it from the impacts of climate change, at the same time to strengthen the roles and to maximize its potentials.

The research considers integrated relationships of three components (1) city scale, (2) city morphology, and (3) impacts of climate change. This is to understand different morphological layers of cities in the delta at different levels and how different urban morphological classifications and scales/grades rationally affected by climate change, focusing on the flood and salinity impacts resulted by average projected future energy-related CO2 emissions scenario. From those above analytical bases, the research proposes groups of climate change adaptabilities for the Mekong region and classified cities within, from spatial planning strategies, water management and more detailed structural and non-structural solutions

**Keywords:** Mekong delta, Vietnam, climate change, sea level rise, salinity, flood, adaptation

17	87	Urban Flood in the Context of Climate Change in Ho Chi Minh City: A Case Study of Nha Be District	Ngo Le Minh
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*Le-Minh Ngo, Ton Duc Thang University, Ho Chi Minh City, Vietnam*

*Dao Chi Vo, Southern Institute of Social Sciences, Ho Chi Minh City, Vietnam*

*Le Thi Kieu, Vietnamese-German University, Binh Duong, Vietnam*

*Pham Thi Ngoc Diep, Southern Institute of Social Sciences, Ho Chi Minh City, Vietnam*

*Hai-Yen Hoang, Hutech University, Ho Chi Minh City, Vietnam*

Located by Nha Be River and within 30 km from South China Sea, Nha Be District is one of outer districts of Ho Chi Minh City that has undergone severe urban flood caused by multi-factors. For a comprehensive understanding of urban flood in this district in the context of climate change, this quantitative study aims to describe frequency, intensity, and impacts of flood on the locals as well as to summarize multi-scale responding approaches.

By surveying 210 households in Nha Be District and 14 in-depth interviews with community representatives and land management officers, the study found that the rapid urbanization, coupled with climate variability in the last 10 years, has been contributed to the complexity of flooding in the areas characterized by low-lying terrain and interlocking waterway system. Among the surveyed

households, a half of them have frequently faced with flooding throughout the year, and 39.4% of them have been impacted at certain time. Intensity of flood is variable with the average depth recorded at approximately 20 cm. Since flood has negatively influenced living quality, commuting, and housing quality, several solutions has been implemented by homeowners, community, and local government to cope with the growing impacts from flood. Despite certain approaches taken by different stakeholders, it is critical to propose further approaches to deal with urban flood in Nha Be District. These approaches might take into account the solutions relating to flood-proof housing and urban areas in responding to urban flood in the context of climate change.

**Keywords:** Urban Flood, Housing, Climate change, Nha Be District, Ho Chi Minh City

18	93	Vulnerability and Flood Risk Analysis for Urban Area - A Case Study of Ho Chi Minh City	Pham Van Song
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*Pham Van Song, Vietnamese-German University, Binh Duong, Vietnam*

*Bui Thi Minh Ha, University of Social Sciences and Humanities, Ho Chi Minh city, Vietnam*

*La Vinh Trung, Vietnamese-German University, Binh Duong, Vietnam*

*Jean-Paul Vanderlinden, Université de Versailles Saint-Quentin-en-Yvelines, Guyancourt, France*

In recent years, urban flooding has become a wide-spread phenomenon and a major concern in Ho Chi Minh City that has been accompanying the city’s rapid growth. This paper aims to present a review of current approaches to sustainable flood management in Ho Chi Minh city. How engineering-based approaches may interact with land-use planning-based approaches and with social and economic vulnerability centred approaches were analyzed. These analyses are in accordance with their potential to influence exposure and vulnerability. We would also assess how current challenges relate to an agenda for interdisciplinary risk management science. Lastly, the conclusion on how risk governance may contribute to science-based decision making in the context of flood risk management would be presented.

**Keywords:** Urban flood risk, vulnerability, flood damage, urban resilience

## THEME 2

Day 1: 28th November, 2019

R2-T2-S1: 11:15 - 12:30 (Chaired by Mike Douglass)

1	16	Consensus, Agonistic, and Participate Planning in Equation Model	Structural	Detchat Niyomtrong
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*Detchat Niyomtrong, Khon Kaen University, Khon Kaen, Thailand*

*Pornnarong Charnnuwong, Khon Kaen University, Khon Kaen, Thailand*

This article aims to study the relationship of consensus groups, agonistic groups, and participation. participate in the concept of equality in order to formulate planning for the participation of the public sector in each stage of effective planning. That covers pluralism democracy in order to support regional planning and social dimensions that lead to sustainable development. This study focuses on reviewing literature, concepts, theories and research related to consensus groups, agonistic groups, and participation. Participate in the creation of images of models and assumptions for research with the features and capabilities of the structural equation model analysis tool. In order to know the possibility and appropriateness of choosing tools for testing theories that relate to both democracy and pluralism democracy, which the study found elements from consensus groups, agonistic groups, and participation can participate in the conceptual model to create images, models based on structural equations, and two types of agonistic theory tests. Which is interesting and issues of education which appears in detail according to the assumption, that the model 1 defines the initial variable is the consensus group. The dependent variable is participation and the insertion variable is agonistic, with the following assumptions: H1 is the majority of the positive influence of the H2 argument, Which is the most positive influence of H3. And the second model defines the initial variables: participation H2 is the participation with a positive influence on the majority of the voices. Both models have the challenge of studying to formulate assumptions in accordance with research objectives. For determining status and relevance to stakeholders and the participation process participating in the design and setting conditions for planning, that cares about the controversial voice group. It is important to determine the status of participation and process design for effective participation.

**Key words:** Planning, Consensus, Agonistic, Participate, Structural Equation Model

2	72	Governance Characteristics of Dhaka City for Ensuring Implementation of Land Use Planning		Musfera Jahan
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*Musfera Jahan, NKY-PROTEK-SHELTECH JV, Dhaka, Bangladesh*

Governance has become a fashionable term in recent decades and the concepts of governance and urban governance are defined in a variety of ways. Governance of basic urban services has become a

much debated issue in the last one decade because of their inadequate status for the Dhaka city. Governance of urban basic utilities in Dhaka city is a collective business around fifty organizations are involved in the provisioning of numerous services/utilities. Based on aforementioned analysis, it might be mentioned that Bangladesh has been facing a number of challenges in the path of democratic or good governance. These issues comprise lack of accountability and transparency, lack of government effectiveness and regularity quality, lack of rule of law, inefficient leadership, ineffective political institutions, rampant corruption, and widespread poverty. The present practice of fragmented governance has ameliorated the surfacing of some critical service problems namely non-coordination in service management, wastage of resources, inefficient delivery and public inconveniences. Land use planning as a decision-making tool creates an enabling environment for sustainable development of land resources which meets people's needs and demands that can be ensured by effective governance system.

**Keywords:** Landuse Planning, Governance, Urban services, Dhaka City

3	185	Enhancing Physical Activity by Governing Public Spaces - A Case Study of Chirag Delhi Ward	Lakshya Yog
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*Lakshyayog, Jawaharlal Nehru University, New Delhi, India*

The present paper is an attempt to explore the ways through which the state influences the physical activities in the city by governing the public spaces. By taking the example of open public spaces such as public parks and open gym, it aims to interrogate the techniques and methods of influencing/governing the physical activities in the city. The study is located in the Chirag Delhi ward of South Delhi, India. By deploying a mix of qualitative methods such as the Multi-sited ethnography and techniques of in-depth, unstructured interviews, it brings out the uneven distribution of gyms, associated politics, and governance challenges faced by the cities of global south. It uses the Human Capital Model of Physical activity to argue that across the unplanned and planned areas, the nature, methods and spatiality of physical activity varies. By doing a critical reading of the legal planning documents such as the Master Plan of Delhi, it situates public spaces and physical activities in the city. By discussing the themes, such as the role of language and influence of male gaze, it touches upon the issues which have been underexplored in the scholarship on physical activity and governance. The paper shows that state influence through the Plan in both planned and unplanned territories is contested and negotiated in the everyday of the city. While planning for an active city or healthy city, the informalized nature this activity of planning in India at least not only defines the characteristics of the Plan but also the ways through which it influences the physical activities and the nature of physical activity also.

**Keywords:** Physical Activity, Open Gym, Public Space, Male Gaze, Language, Human Capital, Governance

4 80 Convivial Cities: Alternative to Cities of Consumers

Balbir Singh  
Butola*Balbir Singh Butola, Jawaharlal Nehru University, New Delhi, India*

Urban centres were/are happening places. These are valorised as the fulcra of development and modernization. Such constructions were based on the experiences of European countries, which were possible mainly through exploitation of natural and human resources from the colonies with the help of 'modern technologies'. These technologies (machines) were developed to replace slaves but converted men into slavery of machines. To expect these machines based model of development under different nomenclature i.e. Subaltern Urbanism will yield favourable results in the post-colonial countries is preposterous. Convivial Cities, have the potentials to bring in a paradigm shift in alternative urbanization in the Post-Colonial Countries, from Asia and Africa. The shift is in the nature of creating autonomous and creative intercourse among the stakeholders of development and modernization: market, society, culture, environment and technology etc. The present research is based on experiences of Barefoot Doctors and Engineers, at Tilonia, Indian Desert. It is a model of development where skill is imparted through doing and learning, age, language and gender differences do not put restrictions on acquiring skills and certification of competence is done by demonstrating practical solutions to numerous day to day problems. Solutions such as provisions of safe drinking water, electrification (solar lanterns), solar cookers and bio-gas energy plants, rainwater harvesting, handicrafts, night schools for working housewives etc. are put in place. Female entrepreneurs are in the leading position in these Convivial Cities. This model is so successful that it has been adopted by over Forty Three Countries from Asia, Africa and Latin America with the help of Barefoot Doctors and Engineers trained at Tilonia.

**Keywords:** convivial cities, barefoot doctors and engineers, post-colonial, modernization, development

5 153 Tribes at the Margin of Tribal Space: An Inquiry into Urban Spatial Exclusion

Bipin Kumar

*Bipin Kumar, Indira Gandhi National Open University, New Delhi, India**Vijay Kumar Baraik, Indira Gandhi National Open University, New Delhi, India*

As, not all urban spaces obligate to similar situations, neither does all urban poor are on similar footings. Unlike the cities of the global North, where primarily the poor indigenous communities are immigrants, attracted towards cities to secure better livelihood; the tribals of Jharkhand in the urban spaces are mostly 'original inhabitants'. Urban centres in Jharkhand did not evolve and/or expand by excluding regions of tribal habitation. Their original positions/locations have increasingly been set to squeeze, producing marginalised and deprived conditions, primarily through various socio-economic and cultural processes; by the continuous inflow of well-off immigrants. This study attempts to understand the spatiality of the tribal habitation in the city space, moving further to examine whether the city presents itself as segregated or integrated space. It also delves into understanding the processes that possibly led to such social morphology within the city. Finally, it focuses on the attributes of such a produced spatiality. The study limits itself to one of the most 'developed' urban centres of Jharkhand- Ranchi city. Location Quotient and key informant interviews with field observations are applied to measure the tribal

concentration and the processes of spatiality, respectively. The findings present a dismal picture, where the tribals find themselves at the margins of the city space through the complex functioning of a number of pull and push factors. The issue of land rights, land alienation, securing a livelihood, development and displacement, tribal identity etc. are all integrally connected in perpetuating urban spatial exclusion and thereby their deprivation.

**Keywords:** Urban tribals, spatial exclusion, urban spatiality, segregated city

6	126	Urban Planning in Vietnam: Why Gender Matter	Le Dinh Phuoc
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*Phuoc Dinh Le, Hanoi Architectural University, Hanoi, Vietnam*

*Huyen Minh Do, Hanoi Architectural University, Hanoi, Vietnam*

This paper provides some initial thoughts on urban planning through a gender perspective. Historically and globally, women have been ignored or neglected in planning domain, which can be seen throughout the development of human civilisation where women were literally absent in this field, not until the 1960s when the ‘second wave’ of feminism has questioned and challenged the notion of its homogeneity. This issue is clear when it comes to Vietnam’s urban planning, which has long been portrayed as a man-orientated profession. Urban planning appears to be separated from gender studies and indeed, there is lack of literature on the connection of the two. It seems that the majority of urban planning educators, experts and architect-planners have taken for granted the notion of gender-neutrality in urban planning, and they have been unaware of how gender difference can shape and influence the establishment of urban form and how cities function. This paper therefore will take a preliminary effort to offer an indicative account on this matter, showing the context of gender unequal distribution in Vietnam’s urban planning, and how deep gender inequality in this industry. It then provides an analysis on the root causes of gender inequalities. The justification for gender study in urban planning will be discussed as well as possible scopes for further investigations will also be raised.

**Keywords:** Vietnam, gender difference, urban planning, inclusive planning, feminism

Day 2: 29th November, 2019

R2-T2-S3: 10:45 - 12:00 (Chaired by Diganta Das)

7	13	Collaborative Approach for Resource Mobilization Transformation in Vietnam	Nguyen Ngoc Hieu
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*Hieu Nguyen, Vietnamese-German University, Binh Duong, Vietnam*

*Dao Tran, Hochiminh city Transport University, Ho Chi Minh city, Vietnam*

This article discusses about the barriers for transforming the resource mobilisation for urban infrastructure development in Vietnam. Depleting Official Development Aids (ODA) and shrinking public budget since 2016 urged authorities to look for alternative financial resources. Troubles in Build and Transfer (BT) model and difficulties of land use rights sales helped decision makers to supplement the traditional approach; however, there are essential barriers should be lifted to support the better collaboration. The author used institutional and background data analyses to unveil how key barriers hampered motivation of local authorities to seek for co-financing mechanism. The findings advocated further renovation on urban autonomy besides improving capacity and appropriate tools to foster better collaboration among key stakeholders.

**Keywords:** Financing infrastructure development, urban budgeting and finance transformation, collaborative development approach, urban autonomy

8	98	Beating the Traffic: Civil Society Participation in Transport Reforms and Innovations	Gina Rocafort Gatarin
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*Gina Rocafort Gatarin, Western Sydney University, Sydney, Australia*

Experiencing traffic in a gridlock has been a staple part of the lives of more than 12 million people in Metro Manila, Philippines. The majority of them use land-based modes of public transport, entailing long hours of travel and substantial fare costs. While there are state plans and projects to address the gridlocked situation, they tend to focus only on infrastructure building and technology solutions. They forget to look at the political and cultural aspects of the traffic gridlock and the urban transport system. These solutions tend to marginalise “meaningful” civil society participation in transport reforms and innovations in Metro Manila. This is why this research engaged in an auto-ethnographic immersion in Metro Manila’s transport system and located spaces for civil society-led transport reforms and innovations. It also conducted interviews with representatives of civil society organisations, government transport agencies, and the private sector on how they frame, practice, and imagine transport reforms and innovations. As such, the study attempts to reconstitute the political and cultural dimensions of urban transport as a project of “shared responsibility” with the heterogeneous constituents of the transport system. It builds upon a postdevelopment discourse and the urbanism of Jane Jacobs in understanding modernity and urban development. In this way, the research contributes to how meaningful collaboration in transport reforms and innovations can provide possible sustainable and less interventionist solutions to the transport problems of metropolitan cities in the Global South.

**Keywords:** civil society, Metro Manila, urban transport, traffic

9	168	A Framework to Assess Community Indicator Systems: Bringing Conceptual Clarity to Research and Policies on Neighborhood 'Quality of Life'	Ate Poorthuis
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*Ate Poorthuis, Singapore University of Technology and Design, Tampines, Singapore*

*Anupama Nallari, Singapore University of Technology and Design, Tampines, Singapore*

Community indicator systems (CIS) such as 'quality of life', 'community well-being', and 'liveability' have been used to measure the conditions of living, and people's perceptions thereof, across multiple dimensions (e.g. material, social, and political) in cities throughout Asia. Although these concepts share this common basis, each concept tends to relate to specific (spatial) scales and units of analysis, and comes with different theoretical and methodological underpinnings. However, in research, but especially in practice, multiple concepts are used in interchangeable or interconnected ways, with the exact, operational definition remaining tacit. This has led to a conceptual stretching: contradictory notions of the meaning and use of these constructs make it difficult to properly assess the validity and utility of a particular approach and its implications for urban policy.

In this paper, we aim to create conceptual and methodological clarity and consistency in the field of CIS. We construct an analytical framework to assess forty empirical CIS studies conducted over the last 20 years at the local or neighbourhood scale. We assess each study based on its theoretical underpinnings; the process through which it develops its indicators; what domains or indicators are selected; how indicators are subsequently assessed or scored; and, finally, the policy recommendations and outcomes (and the effectiveness of these policies). In doing so, we create a guiding framework for future work in CIS. We show the potential use and implication of this framework by applying it to a community indicator system developed by the authors to assess quality of life in Singapore's public housing estates.

**Keywords:** Community Indicator Systems, Quality of Life, Urban Governance, Singapore

10	145	Agriculture Transformation towards Urbanization	Nguyen Minh Dieu	Thi
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*Nguyen Thi Minh Dieu, Hong Bang International University, Ho Chi Minh City, Viet Nam*

Some cities in developing countries currently experience a maelstrom of rapid, uncontrolled urban sprawling. The peri-urban regions capture almost farm areas with various agriculture activities, and some of them are the transaction zones between urban area and natural forest areas. Geographical characteristics of peri-urban areas and vast agricultural land bring advantages for sustainable development. Particularly, when they are the main increment of preservation-degree of the environment as a key for the sustainable pattern. The change of agriculture drawn on land transformation and the shift in profitability on-farm forms becomes a considerable issue in sustainable development. The perception of the community becomes different because of the strong investment in commercial activities. Followed that, prime agriculture converts into other forms for higher using values. Research is conducted in Dalat city where the government is promoting the implementation of “city in the forest, forest in the city” and high-quality tourism.

The purpose of this paper is to introduce the special issue of the transformation of land and agricultural activities to define how all of the transformation contributes and affected by the urbanization process of the city by evidence from the local community. After reviewing the urbanization process in reality in policies and plans, the paper briefly outlines the special features in the agricultural sector. It also emerges from perceptions of selected key local stakeholders through interviews and questionnaires. When looking into local community who really involved in this process, the study would show clearly some hints for possible goal planning approaching sustainable development.

**Keywords:** agriculture transformation, urbanization, local community

11	227	Neoliberalism, Urban Corruption and Impacts on the Poor: The Case of Durban in South Africa	Brij Maharaj
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*Brij Maharaj, University of KwaZulu-Natal, Durban, South Africa*

Until recently, corruption was a neglected area of research in urban studies. Corruption is complex and clandestine, has been exacerbated in a neoliberal world order, and is a challenge to good urban governance. The independent, critical media; the internet (and the associated social media); and the spread of democracy meant that it was difficult to conceal corruption which is regularly exposed in the public domain. In many cities in Latin America, Asia and Africa corruption contributes to the de-legitimisation of political and institutional systems, and frequently benefits the ruling elite, while the ultimate victims are the poor whose basic human rights are violated. Contrary to expectations, the South African experience has been no different with an estimated R30bn of public funds being lost annually to graft. This paper analyses the escalation in urban corruption in the local government sector in South Africa, with specific reference to the city of Durban. Corruption in Durban took the form of financial mismanagement and irregular expenditure, tender and procurement anomalies, collusion between public employees and private companies, and elected councilors engaged in business with the city. In Durban corruption resulted in basic services such as refuse collection, access to housing and water, and

public transport not being provided for poor citizens, who are forced to take to the streets to protest poor service delivery. The inevitable consequences of corruption include an increase in the cost of public goods and services and excessive billing to government, declining standards (e.g. construction). Corruption perpetuates and widens socio-spatial inequalities; diverts resources away from the poor; and undermines good governance, rule of law and constitutional democracy. As public resources are squandered, the ultimate losers are the poor and disadvantaged, whose lives are 'de-valued'. Their plight remains unchanged from the apartheid era, notwithstanding promises of a 'better life for all', which remains a meaningless slogan. In Durban there was a deliberate departure from processes and practices that promote good, transparent and accountable urban governance.

**Keywords:** Corruption, poverty, Durban

12	24	Information Economy, Employment Vulnerability and the Emergence of New Urban Marginality in Dhaka City, Bangladesh	Rasel Hussain
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*Rasel Hussain, East West University, Dhaka, Bangladesh*

The 21 st century is witnessing huge remarks in the informationalization of the world economy and the restructuring of capitalist economy as a side effect. The paper aims to explore the new urban marginality due to the rise of information-based economy in the city of Dhaka, Bangladesh. The study is based on the theoretical frameworks of Castells, Sassen, Fainstein, and Friedman and Wolff. The study reveals that most of the poor people living in these neighborhoods are involved in the informal sectors of the economy where they have to work long hours and they receive lower income. It further reveals that the poor are marginalized due to their poverty and illiteracy about technology and thus they are denied from the access to the urban services as well. The study argues that due to the intervention of information as well as technology-based economy economic restructuring taken place and changes becoming visible in the economic sphere particularly in job market which discriminate the urban poor and illiterate mostly.

**Keywords:** Information economy, Economic restructuring, Marginality, Dhaka city

R2-T2-S5: 14:45 - 15:35 (Chaired by Liliana Dumitrace)

13	133	Slum Children-youth Groups Demonstrate Zest, Collective Confidence and Tenacity to Improve Access to Education and Self-development Opportunities	Kanupriya Kothiwal
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*Siddharth Agarwal, Urban Health Resource Centre, New Delhi, India*

*Shabnam Verma, Urban Health Resource Centre, Indore, India*

*Kanupriya Kothiwal, Urban Health Resource Centre, Indore, India*

*Neeraj Verma, Urban Health Resource Centre, Indore, India*

*Kailash Vishvakarma, Urban Health Resource Centre, Indore, India*

Slum children/youth are excluded from benefits of India’s urbanizing economy. Unequal access to education, self-expression hinder 36ouncilors36 their potential. This programme research is undertaken in Indore, India to better understanding methods through which slum children a) overcome gender inequality; b) overcome hesitation, develop confidence and skills; c) access government scholarships.

Information was collected through Focused Group Discussions with slum children and youth, individual interviews and participant observation during activities. UHRC 36ouncilor slum children’s groups in Indore. One boy, one girl leaders per group contribute to a more gender-equitable society. They collectively identify needs for stimulation; ways to enhance confidence, strengthen as groups, contribute to evolution of program, and motivate children in neighbouring slums. Extra-curricular activities by UHRC provide platforms for self-expression (e.g. street plays), develop team-work and leadership skills and build self-confidence, zest, tenacity to overcome odds. Children and UHRC’s social facilitators urge ward 36ouncilors to endorse hand-written applications for income certificates, obtain certificates from District Magistrate’s office; submit to schools to access Government scholarship. Child/youth development is fostered through avenues for self-expression, excelling incrementally and cultivating positive self-image. Communication and leadership skills emerge. Children/youth groups’; petitions/requests to Municipal Corporation have improved slum lanes, drains. Interruption of children’s school education has reduced.

Social interactions help children/youth to overcome hesitation, focus on aspirations, and acquire ability to influence circumstances. Increasing number of youth complete schooling, complement family-income; demonstrate gender sensitivity, undertake socially productive community actions e.g. improving hygiene and living environment, reduce school-dropout.

**Keywords:** children, youth, education, slums, India

14	135	Assessing and Overcoming Social Challenges: Utilizing Slum Community’s Inherent Wisdom and Persevering with Problem Solving Efforts	Agarwal
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*S. Agarwal, Urban Health Resource Center, India*

*M.R. Sharma, Urban Health Resource Center, India*

*C.B. Sharma, Urban Health Resource Center, India*

*K. Kothiwala, Urban Health Resource Center, India*

Topic/Theoretical focus: Vulnerability in Asian cities is growing. Working adaptable methods to understand social determinants of health, well-being through community wisdom and pursue actions to reduce inequalities are needed.

Objectives: To qualitatively analyse challenges and pursue action to improve slum's social conditions using women's wisdom.

Study Area: Slums of Agra, India

Data and Research Methods: Slum women assess conditions of slums on visual charts using a three colour scale – green indicating good performance, yellow indicating moderate while red indicating weak performance. Women develop action plans vis-à-vis challenges identified.

Findings: Collective analysis and participatory action was carried out by slum women. Of the twenty-four slums assessed, 6 were designated as “red”, 14 as “yellow” and 4 as “green” on alcohol consumption and gambling. On girl child education, 8 slums were collectively designated as “red”, 10 as “yellow” and 6 as green. Context-responsive community actions to overcome social challenges including a) community petitions to authorities requesting removal of alcohol and gambling joints; b) co-opting support of elected ward-councillors, c) strengthening slum women's groups, community cohesion and women's empowerment; d) encouraging girl child education.

Significance: This approach facilitates communities to focus energies on persevering with implementing identified solutions to challenges. Gender-inequality manifested as domestic violence, alcoholism and low girl education are key determinants of health and well-being.

This method can be adapted to understand social determinants of health, well-being through community wisdom. Grassroots actions, community engagement and leadership are required as central tenets of public policies to address social inequalities.

**Key words:** Participatory Action, Community Wisdom, Slums, Women, India

15 134 Inclusive Urban Governance Approach in Indian

S. Verma

*S. Verma, Urban Health Resource Center, India*

*S. Agarwal, Urban Health Resource Center, India*

*K. Kothiwala, Urban Health Resource Center, India*

*N. Verma, Urban Health Resource Center, India*

*M.R. Sharma, Urban Health Resource Center, India*

*C.B. Sharma, Urban Health Resource Center, India*

Topic/Theoretical focus: Demand-side approaches can help cities facilitate inclusiveness for their under-resourced populations thus moving towards SDGs.

Objectives: To evolve adaptable methods for enabling slum dwellers access services and entitlements

Study Area: Slums of Indore and Agra, India

Data and Research Methods: Compiling program monitoring data during April 2017- March 2019 and information through qualitative interviews with slum women.

Findings: UHRC mentored community groups a) help individuals apply and obtain Government picture ID and address-proof, b) negotiate with elected Ward representatives, Municipal officers for improving physical living environment, c) facilitate behaviour promotion for toilets and electric connections. Inclusiveness was assessed through a) 60,000 persons acquiring government ID/address-proof, enabling legitimacy as 'citi-zens' and facilitating applications for government schemes/services, b) 40,000 accessing metered electric connections, c)145,000 benefitting from slum-lanes, d) 150,000 from improved garbage cleaning, e) 80,000 building household toilets.

Significance: Demand-side approaches include a) building capacity of slum women's groups to foster social cohesion, improve behaviours, avail government services/entitlements to strengthen governance; b) women's empowerment fosters gender equality in slums, improving girl-child education; c) non-confrontational negotiation through community petitions/reminders, maintaining paper-trail with elected representatives and officers to improve slum infrastructure, services, d)encouraging low-cost toilets with soak-pits, sewerage connection in slum houses preventing infections, ensuring dignity for girls, women.

Appreciation, mentoring, training builds collective confidence, negotiation skills among urban disadvantaged communities to strive to improve their lives. Social recognition, respect, confidence, skills acquired are factors for women's motivation.

Practical lessons from Indore and Agra are adaptable in Asian cities for inclusiveness.

**Key words:** Inclusive, cities, governance, demand-side, slums, India

### THEME 3

Day 1: 28th November, 2019

R3-T3-S1: 11:15 - 12:30 (Chaired by Nguyen Thanh Tu)

1	206	The Impact of E-Mobility on Greenhouse Gas Mitigation in Vietnam	An Minh Ngoc
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*An Minh NGOC, University of Transport and Communications, Ha Noi, Vietnam*

*Khuat Viet HUNG, National Traffic Safety Committee, Ha Noi, Vietnam*

This paper investigates possible scenarios of electric bus introduction and their impact on the Vietnam Greenhouse gas (GHG) mitigation. Give the foreseen increased number of bus until the year 2030, three different scenarios in terms of penetration of electric vehicles have been considered, namely 10%, 20% and 40% of new vehicle sales. A detailed bottom up energy model of the Vietnamese bus fleet has been developed. The vehicle fleet is analyzed in term of energy consumption and carbon emissions. The analyzed scenarios suggest that the introduction of electric vehicles would always lead to primary energy savings. In particular, the increase of the penetration corresponds to a decrease of primary energy consumption, and carbon emissions.

Keywords: E-Mobility, Electric Bus, GHG

2	130	A Transportation Optimization Model for solving the Single Delivery Truck Routing Problem with the All different Constraint in MS Excel	Dinh Hai Dung
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*Dinh Hai Dung, Vietnamese-German University, Binh Duong, Vietnam*

Smart city consists of smart transportation which helps to minimize the use of resources. The purpose of this paper is to demonstrate how to design a model with its objective function and constraints in Solver in MS Excel to solve the Single Delivery Truck Routing Problem. The routing optimization problem is particularly useful and finds applicability in various industrial areas, including solid waste management, warehouse order picking, manufacturing and logistical planning. Let us consider a distribution center, i.e. a factory, at one location that has to send a truck daily with refills to retail centers located in a set of  $N-1$  neighboring locations. The distances or travel times between pairs of neighboring locations are given as an  $N \times N$  matrix. The distribution center wishes to route the truck from the origin to all other retail centers and back to the origin such that the distance or time travelled is minimized. For example, a greedy algorithm which always search for the next shortest connection possible route provides a solution of  $X_{Greedy}$ . Can we find a route that is shorter than  $X_{Greedy}$ ? Different types of mathematical algorithms, among which heuristics such as genetic algorithm or particle swarm optimization can be used to address the problem. This paper offers another approach in solving the proposed problem with the MS Excel Solver. The numerical example described in this paper is intuitive and can be extended to further complex planning problems.

**Keywords:** Operations Research, Mathematical Optimization, Transportation Planning, Network Flow Optimization, Heuristics

*Vu Anh Tuan, Vietnamese-German University, Binh Duong, Vietnam*

*Huynh Duc Nguyen, Vietnamese-German University, Binh Duong, Vietnam*

In developing countries in Asia, especially Vietnam, motorcycles are a dominant mode and often share lanes with automobiles. Though motorcycles contribute to the highest share of road accidents, but it might offer a solution to enhancing urban mobility because of its high capacity. Separating motorcycles from automobiles might help maximize capacity and minimize accidents. However, how to design and regulate the operation of motorcycle lanes in the local context has not been fully answered. This paper aims to compare the characteristics of motorcycle only lanes and mixed traffic lanes to show the necessity of introducing motorcycle lanes, and recommend a guideline for designing and operating the lanes in urban areas. First, video-based observations are conducted on three motorcycle exclusive roads and one traffic mixed road in Ho Chi Minh City to develop a fundamental relationship between traffic volume, speed, and density. A microscopic simulation model using VISSIM is calibrated to simulate the operational characteristics of traffic flows. The capacity of a motorcycle lane is then determined with respect to the number of lanes and land width. The state-of-the-practice on motorcycle lane is reviewed to establish a set of components and design principles for a motorcycle lane system. Principles for effective operation of motorcycle lanes are also suggested. The study outcomes would support efficiently reallocating the existing road spaces and correcting the design of new urban roads for better urban mobility.

**Keywords:** Powered two-wheelers (PTW), PTW lanes, Fundamental traffic flow relations, Road design, Ho Chi Minh City

R3-T3-S2: 13:45 - 15:00 (Chaired by An Minh Ngoc)

4	204	A Study on Pedestrians' Unsafe Crossing Behavioral Intention at Signalized Intersections in Vietnam	Vuong Xuan Can
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*Xuan- Can VUONG, Southwest Jiaotong University, Chengdu, China*

*Rui- Fang MOU, Southwest Jiaotong University, Chengdu, China*

*Trong-Thuat VU, University of Transport and Communications, Hanoi, Vietnam*

*Thi-An NGUYEN, National Economics University, Hanoi, Vietnam*

This paper presents a model for pedestrians' unsafe crossing behavioral intention at signalized intersections based on the theory of planned behavior (TPB). The model has been proposed with three factors, including attitude toward unsafe crossing behavior, subject norm, and perceived behavior control that impact on pedestrians' unsafe crossing behavioral intention. Taking Vietnam as an example, through the reliability and validity test of 508 participants, the structural equation model (SEM) of pedestrians' unsafe behavioral intention is constructed to predict the unsafe crossing behavioral intention of pedestrians. Simultaneously, the relationship between influencing factors is obtained. The results show that perceived behavior control is the key determinant of pedestrian crossing intention, followed by attitude toward unsafe crossing behavior, and subject norms. This also shows that the proposed model can effectively explain and predict the unsafe behavioral intention of pedestrians in Vietnam's situation.

**Keywords:** Unsafe Behavioral intention, Pedestrians, TPB, SEM

5	160	An Elicitation Study on Potential Users' Salient Beliefs of Using Future City Light Rail Transit	Reynaldo Siahhaan
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*Simon Dertha Tarigan, Saint Thomas Catholic University, North Sumatera, Indonesia*

*Reynaldo Siahhaan, Saint Thomas Catholic University, North Sumatera, Indonesia*

*Oloheta Gulo, Saint Thomas Catholic University, North Sumatera, Indonesia*

The theory of planned behavior (TPB) has been widely used to explore behavioral intention in many disciplines including future travel mode choice. LRT construction in Medan city is due to commence in 2020. We are interested in exploring its potential users' salient beliefs that will drive psychological factors, which eventually generate future intention to use LRT for daily trip. An elicitation study is recommended to firstly identify the salient beliefs that potential users hold towards the future LRT. Using semi-structured interviews consisting 9 open-ended questions, we interviewed and obtained data from 150 respondents. In general, the result shows that the potential users dominantly hold positive belief, e.g ability to improve travel time efficiency and help with congestion. Whereas, difficult access to station and possibly stuck in crowding are believed to be negative drive.

**Keywords:** Salient Beliefs, Theory Of Planned Behavior, Future LRT System, Commuting Trip

*Sarath Kuttikkatuparambil Thilakan, Mumbai Univeristy, Maharashtra, India*

*Talat Munshi, Denmark Technical University, Kgs. Lyngby, Denmark*

The transit systems being developed up and about all over the country, has multidimensional impacts on economic, environmental and sociological aspects. A perfect transit system would be the one which can bring more people out of their cars to the transit system and which is more equitable, affordable and environmentally friendly. Research is about the BRTS system in Ahmedabad and how much it has affected the way people travel, in short, the mode choice changes that have occurred before and after the BRTS have been analyzed and inferred. The changes for NMT users, who are most vulnerable among all mode users, especially in a city like Ahmedabad, was studied. Random sampling was done for a sample size of 130. The survey was done to know the shifts made by the road users and the reasons for the shifts and the issues they face using stated preference and revealed preference survey.

**Keywords:** Mode choice, Non-motorized-transit users, BRTS, mobility, mass transit

7	209	Policies and Measures to Create Efficient and Low-Carbon Transport in Urban Area: Case Study in Ho Chi Minh City	An Minh Ngoc
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*Vu Trong TICH, University of Transport and Communications, Ha Noi, Vietnam*

*An Minh NGOC, University of Transport and Communications, Ha Noi, Vietnam*

The transport sector is one of the main sources of greenhouse gases and other pollutants that cause climate change. There is therefore a pressing need for change in the form of policies and actions that seek sustainable development by decreasing the environmental consequences and other negative externalities of transport systems. Any proposed solutions should be comprehensive and encompass the transport framework and the operation of individual modes of transport, fostering low-carbon transport that furthers sustainable development in urban areas in Vietnam. This paper looks at the current state of transport development in Hochiminh City and propose the way to create efficient and low-carbon transport on it.

**Keywords:** Urban Transport, Climate Smart City, Policy

8	216	Motorcycles in a Long-term Perspective: Case of Ho Chi Minh City	Nguyen Thanh Tu
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*Nguyen Thanh Tu, University of Transport and Communications, Ha Noi, Vietnam*

Currently, motorcycles are the dominant mode of transport not only in Ho Chi Minh City but also in the major cities in Vietnam. How did motorcycles pass from the ego of the bicycle in the 1990s and can we avoid an automobile boom that experienced by the industrialized countries? Demography is a powerful explanatory factor for long-term changes in mobility. Indeed, the distance traveled per person per day (both overall and in the dominant mode) follows a bell curve during the life cycle, which peaks when people are at the age of forty years old. The demographic transition (slowdown in population growth and aging) should lead to a slowdown in overall mobility, which will have to be divided between the modes of travel at the different projection horizons. This paper mainly aims at better understanding the impact of changing demographics on the long-term evolution of daily mobility. By using a demographic-based model, the author estimated the motorcycle trend in Ho Chi Minh city, in particular, estimated the share of motorcycle in total mode of transport; the total travel distance and the trip rate by motorcycle.

**Keywords:** Motorcycle, Mobility, Age Cohort Model

9	207	Policy Implications for Natural Gas Vehicle Development in Vietnam	An Minh Ngoc
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*An Minh NGOC, University of Transport and Communications, Ha Noi, Vietnam*

*Vu Trong TICH, University of Transport and Communications, Ha Noi, Vietnam*

Nowadays in Vietnam the road transport still relies on fossil fuel. In terms of greenhouse gasses, the percentage in transport has grown up from 22.5% in 2014. Accordingly, and in order to avoid the increase of these key percentage, solutions for the usage of alternative fuels have been detected. Among all alternative fuels, compressed natural gas has been considered as one the best solutions for

fossil fuel substitution because of its availability throughout the world, inherent clean burning, economical as a fuel and adaptability to the gasoline and diesel engines. In a step towards adopting environment friendly fuel, Natural Gas Vehicle has been interested by Vietnam Government recently. However, CNG sector in transport has still remained at low level. This paper implies the policies for developing CNG as transportation fuel in Vietnam. The list of countries that have already developed the NGV fleet is discussed. Various aspects of the CNG program in these countries, for example conditions, market development initiatives, and market development dynamics are illustrated.

**Keywords:** Natural Gas Vehicle, Greenhouse Gas, Policy

## THEME 4

Day 1: 28th November, 2019

R4-T4-S1: 11:15 - 12:30 (Chaired by Ha Thuc Vien)

1 37 Property Rights and Street Vending: The Bangkok Case

Chaitawat  
Boonjubun

*Chaitawat Boonjubun, University of Helsinki, Helsinki, Finland*

In studying Global South cities, a large body of literature on the role of property rights focuses on secure housing tenure as a solution for slums. A little attention has been given to the informal economy as there is little debate on property rights regime in public space. Scholars (for example, Mitchell, 2003) argue that public space is actually far from 'public' in terms of access and rights to use. It is understood that public spaces particularly in urban areas are collectively consumed goods; nonetheless, in many cases they are congested bringing about restricting their use (Brown et al., 2015; Webster, 2007). Street vendors in public space specifically of cities in the Global South often face continuing evictions from streets. This paper examines the importance of property rights for street vending. In particular, the paper tries to answer two key questions: How do street vendors understand the concept of property rights, especially a bundle of rights, in the Thai context? To what extent is the ownership of vending space important to street vendors? Data were collected by interviews with street vendors using private and public spaces in the Bangkok Metropolitan Area and document analysis. The results of this study will contribute to the on-going discussions in urban studies on street vending as a significant informal economic activity in connection with the issues of property rights.

**Keywords:** Bangkok, Informality, Informal Economy, Property Rights, Street Vending

2 54 Transformations in Land Management

Phan Hai Ho

*Phan Hai Ho, Ho Chi Minh City Cadre Academy, Ho Chi Minh City, Vietnam*

Summary: Urban land is a core issue that directly affects urban management, especially urban future and urban change. In the scope of this article, we discuss aspects of the legal value of urban land (status and nature of land use changes in land law ...); valuable land use rights; land economic value (when compensation, site clearance, transfer, investment ...); urban land management methods and tools (natural management, management of urban development trends and urbanization, management orientation according to the core values of urban land ...), tools management such as Urban Planning Law, Land Law and policies and plans on urban land use ...

**Keywords:** Land, urban land management, core values, legal value of urban land, valuable land use rights

3 90 Could Waqf Land Contribute Resolving Urban Problems? The Case of Bangkok

Sefer Kahraman

*Sefer Kahraman, University of Helsinki, Helsinki, Finland*

Seeing private ownership as natural and other forms of land tenure as transitional has cast a shadow over the fact that there still exist various types of land tenure. One of those is the land held by faith-based organisations. During the years, Christian churches, Buddhist temples and Islam mosques have received land as donations, and have today significant land assets under their management. This paper looks the

case of waqf land in the Islamic tradition, investigating both Islamic theories of waqf land and the laws and practices in Bangkok. The point is to find out how the endowment of waqf land and the Islamic principles of charity contribute resolving the urban question. This study is a beginning of a larger project to investigate the origin, meaning, use, justification and function of waqf land. Empirical data is collected by interviewing Imaams in mosques.

**Keywords:** Land, Housing, Waqf

R4-T4-S2: 13:45 - 15:00 (Chaired by Hans-Joachim Linke)

4	79	GIS and Fuzzy Logic Approach for Providing Land Value Information: A Case Study in Hanoi City	Doan Quang Cuong
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*Cuong Doan Quang, VNU -University of Science, Ha Noi, Vietnam*

Land value plays a vital role in the success of land distribution processes. Land evaluation is a process of assessing and synthesizing elements of land related to land prices, which help the government plans tax and real estate market policies. However, current land prices are issued by People’s Committees of Hanoi city, mainly based on location and route factors, and not on a combination of factors affecting land values. Therefore, in this study, 9 factors impacting land values were generalized into three groups including (1) public services factors, (2) environment factors, and (3) social-cultural factors. Thereafter, a case study using geography information system and Fuzzy logic was implemented with a view to building thematic raster classes and finding the land value. The results show the distributions of land value zones in the study area, which reflect reality. Based on these findings, managers can make policy plans for land use to ensure sustainable development. Each land value is assigned to a definite plot of land and will be available to the public via e-government.

**Keywords:** GIS, Fuzzy logic, land value, Hanoi

5	44	Historical Urban Growth and Multi-seasonal Land Cover Classification of Dhaka: An Approach Using Google Earth Engine	Chandana Mitra
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*S M Shihab Nur, Auburn University, Auburn, USA*

*Chandana Mitra, Auburn University, Auburn, USA*

Land cover change is considered a major influencing factor of global environment change and climate variability, having noteworthy impact on global and regional scale policy and planning decisions (Oyugi, Odenyo and Karanja, 2016). Being the capital city of Bangladesh and the 3rd most densely populated city in the world (World Atlas, 2018), Dhaka has experienced significant change since its birth. Executed masterplans and urban policies have shaped the city with new outlook in several times. In accordance with the urban growth, land cover of the city has also changed by the passage of time. However, land cover change is traditionally derived from classifying single image of different years maintaining the same anniversary date. Failing to describe the land cover change over the years and inability to distinguish land covers that results from the difference of seasonal images are two major limitations of this process. To achieve more efficiency, this paper has conducted land cover change using 3 major seasons images of a single year. It has used Landsat 30m from Landsat 8 Operational Land Imager (OLI) and Landsat 7 Enhanced Thematic Mapper (ETM+). It has employed image stacking by adding bands of images in Google Earth Engine. Classification and Regression Tree (CART) method has been used for land cover classification.

**Keywords:** Land Cover, Multi-seasonal classification, Google Earth Engine

*Huynh Trong Nhan, MienTay Construction University, Vinh Long, Vietnam*

*Mai Thanh Binh, MienTay Construction University, Vinh Long, Vietnam*

*Le Hoang Thien Long, MienTay Construction University, Vinh Long, Vietnam*

Tan Quy Dong commune was formed from a long time, has the unique characteristic urban space - flower village of Mekong Delta. Due to the low-lying terrain, this area's landscape changes according to the weather season and the tide of Sa Dec river. Besides, almost residential habitation settled along the rivers and interleaving with the cultivation area. These factors make the speciality and the recognizability of this urban space. However, urbanization and the rapid growth of tourism services have made the shift for this flower crafting village. It is not only changed in economic structure, but also caused to the transfer of spatial form, especially in the relation of the dwellings and the canals. Therefore, the research question is how the village' space formed and changed under the impact of urban development. Putting together the reclassification and spatial analysis techniques in GIS with the site survey, this paper willing to explore the relation between the process of economic-tourism development and the transformation of Tan Quy Dong flower crafting village. Thence, the planner and city government can use this analysis results for urban design that keep balance between preservation of this village's characteristics and development.

**Keywords:** Spatial transformation, Tan Quy Dong flower village, GIS

7	205	A Study on the Ecological Balance Capacity of Hanoi Green Corridor	Le Quynh Chi
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*LE Quynh Chi, National University of Civil Engineering, Ha Noi, Vietnam*

*HOANG Dinh Viet, Vietnam Japan University, Ha Noi, Vietnam*

*NGUYEN Van Tuyen, National University of Civil Engineering, Ha Noi, Vietnam*

*TRAN Quoc Thai, National University of Civil Engineering, Ha Noi, Vietnam*

The “Hanoi Capital Construction Master Plan to 2030 and vision to 2050” has been approved and implemented by Vietnamese government since 2011 with the goal of channelling city development to become a sustainable capital in Asia. To achieve that goal, the green corridor has been established with four crucial roles, including: (1) to control the urban sprawl (2) to preserve the landscape and natural value (3) to be a logistics area for central city (4) to consolidate the environment balance. However, different from city green corridor in other countries, Hanoi green corridor embraces various high-density residential areas and new development projects, which has resulted in land-use transformation. Therefore, the paper has two objectives, including (1) evaluating the ecological balance capacity of Hanoi green corridor for the whole city and (2) assessment the change of afore-mentioned capacity since establishment due to city transition. The research methodology is to use the plant biomass calculation tool, combining with high-resolution satellite images in different years. The research result will quantify the ability to balance CO<sub>2</sub> in the air of Hanoi green corridor and its change, providing a scientific basis for adjustment of land use planning toward a sustainable city development.

**Keywords:** biomass, CO<sub>2</sub> absorption, air balance capacity, green corridor, Ha Noi

8	71	Mapping the Initiatives for Risk Sensitive Land Use Planning for the Dhaka City	Musfera Jahan
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*Musfera Jahan, NKY-PROTEK-SHELTECH JV, Dhaka, Bangladesh*

Land use planning as a decision-making tool creates an enabling environment for sustainable development of land resources which meets people’s needs and demands. Conventional land use planning in Dhaka City does not include natural hazards as a factor when determining the appropriate allocation of land uses and related policy for the management of land resources. Approximately 80% of the country consists of flood plains and wetlands subjected to regular flooding, intense cyclonic activity along the coasts, heavy rainfall during the monsoon periods and seismic activity. Therefore, Bangladesh experiences regular disasters related to diverse natural hazards. Considering the disastrous effects of these hazards, it is essential to integrate a land use planning accounts for natural hazards and becomes ‘risk-sensitive’. For risk sensitive issues need to consider micro-zonation, liquefaction issues also. Such a goal is supported by the Bangladesh Sixth Five Year Plan (2011-2015) which emphasizes the need for disaster preparedness, the usefulness of vulnerability and risk assessments, micro-zonation including hazard and risk mapping, and the effectiveness of reducing disaster risk through risk-sensitive land use planning for Dhaka Metropolitan Area.

**Keywords:** Risk-Sensitive Landuse, Micro-zonation, Disaster Risk Management

*Thuc Han Tran, The Leibniz Institute of Ecological Urban and Regional Development, Leibniz, Germany*

*Markus Egermann, The Leibniz Institute of Ecological Urban and Regional Development, Leibniz, Germany*

Energy systems world-wide will have to undergo a fundamental transformation from a fossil fuel base to a renewable energy (RE) system in the following decades to meet the requirements of climate protection and energy security. The obstacle is that transforming to a RE system requires land. However, there might not be enough land for RE providing that land is strictly fix resource and land is needed for growing food and biomaterials. Rapid urbanisation and increasing living standards will double energy consumption (EC) per capita of Vietnam by 2030. This paper uses the Ecological Footprint (EF) concept to measure land area needed to meet the energy demand of Vietnam based on renewables. This will first be done by accessing land area needed for different types of RE (biomass, hydro, wind and solar resources) in Vietnam. Secondly, to question whether the national energy strategies can be able to solve the future demand or not providing population increase and changes in EC. The results reveal that the share of RE in Vietnam will decline significantly by 2030 as the energy strategies seem not to meet the future demand. It will lead to an increase of energy footprint per capita to over 60%. Finally, the paper will provide different RE scenarios to demonstrate what is needed to be done with regard to land management in order to transform the to 100% renewables, and to show the possibilities to reduce EF of energy per capita up to 70% compared to the current footprint.

**Keywords:** Renewable energy, transition, Ecological Footprint

R4-T4-S4: 13:15 - 14:55 (Chaired by Mika Hyotylainen)

10	211	Determine the Purpose of Land Acquisition for Economic Development in Vietnam to Ensure a Balance between Public and Private Interests	Phan Trung Hien
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*HIEN Phan Trung, Can Tho University, Can Tho, Vietnam*

According to Para.3 Article 54 of Vietnam Constitution, the State can acquire land use rights compulsorily in case of necessity for national defense and security and for socio-economic development for public interests. However, Vietnam Law has no specific guidance “for socio- economic development for public interests”... As a result, under the name of calling investment, some provincial governments abuse their power to acquire land not for public purposes, which cause the difficulties for land users’ lives and productions. In some extreme cases, there are conflicts between the land users and the provincial governments. This evokes the need to review the theoretical background about keeping balance between public and private interest when acquiring land compulsorily[ 1 ]. By researching the theories, some practical cases of compulsory acquisition of land, organising conferences, interviews, surveys in Cantho[ 2 ]..., this article proposes solutions to balance between the interests of the parties in comparative perspective. This expects to answer a question: how to develop the country sustainably with to guarantee the land users' rights to improve the land law and increase the democracy in land management in Vietnam.

**Keywords:** Land acquisition, Compulsory purchase, Public interests, Private interests, Land users

11	113	Collective Land Ownership: Works as an Alternative: A Case from China	Sa Haoxuan
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*Sa Haoxuan, University of Helsinki, Helsinki, Finland*

Compared with many previous Soviet union countries, China achieves more successfully in social and economic terms by bringing down poverty, raising education and ensuring better health care (UNDP, 2015). This raises the main question that this paper is going to ask, whether collective land ownership could be an alternative to private land ownership in dealing with conflicts? Specifically, this article asked what is collective land ownership in China? What are the differences between private land ownership and collective land ownership in practices? Do the differences contribute to deal with conflicts or not? The article answers these questions by investigating the land redevelopment in Mengke village that is located in Chaoyang city, Liaoning province, China.

**Keywords:** China, Collective Land Ownership.

12	7	Institutional Challenges in Managing Urban Land Development in Peripheral Area of Ho Chi Minh City	Tran Hoang Nam
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*Tran Hoang Nam, Vietnamese-German University, Binh Duong, Vietnam*

Ho Chi Minh City has rapidly developed over three decades towards a megalopolis. However, the city is dealing with several challenges because of its fast urbanization. The paper aims to analyze current institutional challenges in managing urban land development in peripheral area of Ho Chi Minh City. By using secondary data, the author used institutional analysis method to determine these challenges. There are five issues that should be concerned including (1) Differences between urban planning and

development context; (2) Process of urban plan making and implementation; (3) Stakeholders coordination in managing urban land development; (4) Lack of shared database for urban land development; and (5) Lack of resources for developing new infrastructure.

**Keywords:** Urban land development, urban expansion, peri-urbanization

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Unlocking the Status quo of Waterfront Enclosures in Turku,  
Finland: Redevelopment, Appropriation, and Public Policy

Jani Vuolteenaho

*Sampo Ruoppila, University of Turku, Turku, Finland*

Jani Vuolteenaho, University of Helsinki, Helsinki, Finland

In recent decades, the transformation of erstwhile industrial waterfronts into lofty residences, officescapes and tourism-privileging recreation zones has been a focal point in the studies of neoliberal growth, real estate and planning policies, social divisiveness, public usage and access rights (or the lack thereof), and the new urban commons. In our paper, these urban tendencies and their social implications will be addressed both theoretically and empirically via a case study of Turku, a middle-size seaside city in southwest Finland. The analytic focus is on distinct types of waterside land (by tenure and use) and public accessibility to it. In elaborating the paper's approach, we pay attention to both (i) policy-oriented studies that emphasise the practical accessibility bottlenecks and improvements concerning singular shoreline lots or wider infrastructural and functional arrangements within the city, and (ii) studies critical of neoliberalization-associated property rights, financialization, gentrification and other transitions that tend to compromise the social inclusiveness of spaces by the urban shoreline. Empirically, the study is about realised and projected changes on inner and outer waterfronts in the city of Turku, including the changes in ownership, access and usage of urban shorelines as well as the role and characteristics of redevelopment and appropriation practices in reducing their enclosure. In conclusion, we underscore the complex and protracted nature of waterfront transformations in any given locality, and the crucial role of the local governments in steering the development towards progressive (i.e. mixed, shared, non-exclusive) directions on their waterfronts.

**Keywords:** First Keyword, Second Keyword, Third Keyword

## THEME 5

Day 1: 28th November, 2019

R5-T5-S1: 11:15 - 12:30 (Chaired by Rini Rachmawati)

1	299	Smart City in Asia Developing Country - Binh Duong Vietnam Case Study: Suitable Plan and Actual Implementation	Nguyen Long	Viet
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*Nguyen Viet Long, Becamex IDC Corporation, Binh Duong, Vietnam*

Smart city is a global trend, especially in countries with great economic, technological and human capacity. As an industrial province of an Asian developing country with as many challenges as opportunities, Binh Duong - Vietnam is seeking a differentiated approach that can accommodate local conditions. Recent developments have shown incredible successes. While many others take building a smart city merely as adopting technologies in improving urban activities, Binh Duong takes it as an inclusive and suitable development plan with human-centric approach, that accommodates attracting resources, generating socioeconomic drives for a new period and setting ground for a knowledge and digital economy. Binh Duong establishes a collaborative model that leverages collective resources, clear visions and objectives, yet maintains flexibility in project implementation, taking into account available opportunities and specific situation. Illustrated by specific examples of the past, existing and future projects, the article investigates Binh Duong's breakthrough smart city strategy in alignment with a guiding scheme and the status quo. The study aims to shed light on Binh Duong's approach as a contribution to the theory and practicality of building a smart city in an Asian developing country.

**Keywords:** Binh Duong, smart city, socio-economic development, Triple Helix

2	214	Think Globally, Act Locally: The Challenges of Attracting Creative Class People to Ho Chi Minh City	Pham Thai Son	
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*Thai Son PHAM, Vietnamese-German University, Binh Duong, Vietnam*

This paper aims to identify the challenges of Ho Chi Minh City (HCMC) in attracting people from creative class. The paper starts with a brief literature review introducing the concept of creative class, the group of people having the most important contribution to the development, innovation and creativity of cities. After that, using the statistical data of HCMC's labour force, the paper estimates that less than 5% of people in the city can be considered as creative class and demonstrates that HCMC has to issue sufficient policies to attract more high qualified people from this group. However, using a newly established framework likening what people want to have in a city to the Maslow's hierarchy of needs, the paper reveals that creative class has very high requirements that HCMC cannot sufficiently provide at this moment. In the conclusion, policy implications for urban planning and development of Ho Chi Minh City will be discussed.

**Keywords:** Urban Planning, Creative Class, Human Needs, Ho Chi Minh City

3	163	Evaluating Public Spaces in the Peri-urban Areas of Hanoi in the Urbanization Process (From 2008 up to now). Comparative Studies in Three New Wards of Hanoi (Vietnam)	Ta Quynh Hoa
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*Ta Quynh Hoa, National University of Civil Engineering, Ha Noi, Vietnam*

*Nguyen Quang Minh, National University of Civil Engineering, Ha Noi, Vietnam*

*Doan The Trung, National University of Civil Engineering, Ha Noi, Vietnam*

*Nguyen Manh Tri, National University of Civil Engineering, Ha Noi, Vietnam*

*Dinh Thi Dieu, Vietnam Academy of Science and Technology, Ha Noi, Vietnam*

*Chu Ngoc Huyen, National University of Civil Engineering, Ha Noi, Vietnam*

*Phan Tien Hau, National University of Civil Engineering, Ha Noi, Vietnam*

Public spaces play an important role in urban social life and have a forceful impact on the quality of life for residents. However, one of the critical issues nowadays is that the quantity and quality of public spaces fail to meet the demand and have not yet been properly developed in the current rapid urbanization of an emerging country like Vietnam. In Hanoi's peri-urban areas, where a strong spatial transition and socio-demographic changes can be noted, examining and evaluating public spaces as well as re-conceptualizing public spaces for people are essential. The paper aims to clarify the definition of public spaces in the context of Vietnam and to analyze various patterns of public spaces in peri-urban wards of Hanoi city. The paper focuses on the typology of public spaces in the selected wards and evaluates the quality of public spaces in these areas. With some of the most significant theoretical studies and outstanding practical projects to be systematized, the authors establish a set of indicators to assess the quality of public spaces in peri-urban areas in accordance with the Vietnamese context including accessibility, comfort, meaningful activities, safety and inclusiveness. The public spaces in three peri-urban wards of My Dinh 1, Thuy Phuong and Sai Dong are analyzed and assessed by means of on-site observations and questionnaire surveys. A number of recommendations will be made on the basis of survey outcomes, so that city planners, urban designers and project managers can improve the quality of public spaces towards sustainable development.

**Keywords:** Public spaces, peri-urban areas, evaluation, Hanoi

R5-T5-S2: 13:45 - 15:00 (Chaired by Le Thi Thu Huong)

4	67	Future of Prospective Smart Cities outside Metro Manila	Christine Joyce Mendoza
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*Christine Joyce B. Mendoza, University of the Philippines Los Baños, Laguna, Philippines*

*Christirose Jireh R. Betia, University of the Philippines Diliman, Quezon, Philippines*

The smart city concept is a multi-pronged strategy in addressing the challenges of future human settlements. The study aimed to identify cities and municipalities that have potential to be a smart city in the next two decades outside the Philippine's main seat of economic and political center – Metro Manila. It characterized the urban settlements of three Luzon regions which served as spillover of Manila economic activities and home to about third of the national population. Factors that enable and impede development of smart cities as well as national and local urban and development policies were gathered and analyzed. Survey and secondary data supported the analysis. Guided by the Philippine long-term vision for 2040 and sustainable development pillars, recommended directions include increasing resilience, upgrading infrastructure to engage smart economy, energy, water and citizenry and improving public-private partnerships locally and internationally.

**Keywords:** Smart cities; future cities; urban policies

5	42	Smart Cities: Progress and Challenge in Establishing Livable Cities	Rini Rachmawati
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*Rini Rachmawati, Universitas Gadjah Mada, Yogyakarta, Indonesia*

Cities are now trying to become smart ones. Various information and communication technology-based applications to support the achievement of a smart city have been implemented. However, its achievement seems to have not been linked to livable cities. Linkages of the achievement of a smart and livable city need to be prioritized. For this reason, more attention to the digital literacy of city dwellers, who will utilize smart infrastructure and services, is needed. The dimensions of smart city development, according to the Ministry of Communication and Information of the Republic of Indonesia, includes smart governance, smart branding, smart economy, smart living, smart society, and smart environment. One element of a smart city that is closely related to the achievement of livable cities is smart living. Smart living deals with harmonizing a comfortable environment, guaranteeing health facilities and services, as well as transportation and logistics. Meanwhile, Smart Environment is also a smart city dimension that is related to achieving livable city. Smart environment is related to environmental protection, waste and waste management, and developing sustainable energy competitiveness. However, in building a livable city the success of implementing other smart city elements also has an important role. Furthermore how to ensure the success of a smart city to promote livable city will be the subject of the discussion in this technical session. Besides, we will also discuss the progress and challenges in establishing Livable Cities through the implementation of smart cities.

**Keywords:** Smart cities, Liveable cities

*Fikri Rafif, Universitas Gadjah Mada, Indonesia*

*Latifah Asri, Universitas Gadjah Mada, Indonesia*

*Mustafa Al Azmi, Universitas Gadjah Mada, Indonesia*

*Aidha Imtinan, Universitas Gadjah Mada, Indonesia*

*Rini Rachmawati, Universitas Gadjah Mada, Indonesia*

The implementation of Smart City in Palangka Raya is interesting to be studied because Palangka Raya has both urban and rural landscape. The most extensive of land use is forest with percentage around 72 %. There are many opportunities and challenges to implement the concept of Smart City in Palangka Raya. Despite this uniqueness, the city government strives to implement the Smart City concept in planning the city of Palangka Raya especially to face the challenges of urban development. The city government has a mission focus on Smart Environment, Smart Society, and Smart Economy as the concrete manifestation in supporting the realization of Smart City. The purpose of this research is to describe the implementation of Smart City and the challenges in implementing and developing Smart City in Palangka Raya. This research uses a mix qualitative and quantitative approach by using in-depth interviews, observation, and literature to collect data. Implementing Smart City has become one of the development priorities in the city of Palangka Raya. However, the implementation has not been optimal since it is only focus on developing internet networks in public spaces. The government is also trying to develop applications and websites for public services. Various challenges are faced by government to develop Smart City concept in Palangka Raya, especially to provide infrastructure which is constrained by the geographical conditions, limited budget, and the low quality of human resources.

**Keywords:** Smart City, Implementation, Challenge

7	94	Is Linh Dam Still a Liveable New Town? And How to Make it Work Again?	Nguyen Quang Minh
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*Nguyen Quang Minh, National University of Civil Engineering, Hanoi, Vietnam*

*Ngo Thi Ha Thanh, National University of Civil Engineering, Hanoi, Vietnam*

*Ly Quoc Son, National University of Civil Engineering, Hanoi, Vietnam*

In 1999, exactly 20 years ago, Linh Dam was inaugurated as the first complete urban-housing-and-service complex in Hanoi and welcomed its first residents. This 184-hectare new town was actually a pioneering housing project constructed by Housing and Urban Development Corporation (HUD) with a brand-new concept imported from several countries in Southeast Asia. Systematically planned and properly designed, apart from having taken many advantages of a well-chosen site, Linh Dam became a prototype of a “liveable living quarter” in Hanoi and a “dream to strive for” among millions of city inhabitants. This coveted status remained unsurpassed for the first ten years (1999 - 2009). Recently, this residential area has however considerably (and negatively) changed in many aspects, such as traffic, land use, building density, population size, cityscape, environment, etc. After 20 years, Linh Dam should now be re-evaluated to see how “liveable” it really is. Based on on-site observations, expert and public opinion surveys, and particularly a rating system encompassing seven key criteria (environment, landscape, public space, technical infrastructure, housing quality, social services and communal activities), a redevelopment scenario has been proposed to restore some of the so-called “lost values of liveability” without causing so many problems to residents’ everyday life activities, before putting another (and much better) plan into action for a long-term pathway towards a truly liveable living quarter and a more sustainable future.

**Keywords:** Liveable city, new town; sustainable urban development

8	46	Sustainable Buildings for People - Enhancing Urban Quality of Life in Cambodia	Michael A. Waibel
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*Michael Waibel, Hamburg University, Hamburg, Germany*

Although Cambodia has a long tradition of vernacular architecture where initial building practices took climate conditions into account, currently there is only limited knowledge and awareness about the subject of sustainable buildings. The Cambodian city of Phnom Penh is witnessing a construction boom. Despite the high local electricity prices, the recently constructed buildings are usually neither energy-efficient nor adapted to the tropical climate. Issues of sustainability have still not been sufficiently addressed by either decision-makers in the construction industry, the responsible ministries, the educational institutions nor building users.

The paper will introduce a people-centred and holistic approach to promote sustainable buildings in Phnom Penh in the context of the trans-disciplinary research project “Build4People: Sustainable Buildings for People – Enhancing Urban Quality of Life in Cambodia” funded by the German Federal Ministry of Education and Research (BMBF). Thereby the urban society is regarded as fundamental driver towards a sustainable urban transformation. A key target group are the so-called new consumers,

the rapidly emerging urban middle classes with globalized lifestyles of high resource consumption and sharply rising ecological footprint. Finally, more people-centred modes of urban governance which incorporate the notion of well-being and urban quality of life as well as the reduction of environmental stress will be discussed.

**Keywords:** Urban Quality of Life, Sustainable Buildings, Cambodia, Phnom Penh, Urban Governance

9	233	Core Value of Urbanization in the Condition of Building up to the Smart City has the Good Quality of Life for Citizens - The Case Study of Ho Chi Minh City, Vietnam	Ha Thi Lien
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*MA. Ha Thi Lien, Ho Chi Minh City Cadre Academy, Ho Chi Minh City, Vietnam*

*MA. Dau Ngoc Linh, Ho Chi Minh City Cadre Academy, Ho Chi Minh City, Vietnam*

There are many theories related to the urban development as well as the different view of points, the different way of assessing and ranking about the smart cities. All of those things have been offered in order to serve well for the citizens, to help them have a good living environment, have a great living condition and have a better life. With the mission of being the high quality of life, civilized, modern and meaningful city, those mentioned above play an important role and are considered as the core-valued to build up the Ho Chi Minh city with many different characteristics to compare with other cities in the condition of building the smart city in Asia and other areas in the world. In this paper, the author focused much on the researching and proposing the key solutions to develop the typical and core valued that contribute to the Ho Chi Minh city where is truly a place with high quality of life for citizens –a city where is the worth living not only for Vietnamese but also for the global citizens as a great destination for them.

**Keywords:** Smart city, core value, worth living city

10	120	Evolutionary Livability of New Urban Areas in Hanoi: From Plan(ning) to Market(ing)	Tran Minh Tung
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*Minh Tung Tran, National University of Civil Engineering, Hanoi, Vietnam*

*Thanh Hung Nguyen, Vietnam Institute for Urban and Rural Planning, Hanoi, Vietnam*

*Ngoc Huyen Chu, National University of Civil Engineering, Hanoi, Vietnam*

Livability concerns reflect a natural evolution of planning priorities to meet the needs of a relatively affluent post-industrial society. In Vietnam, after the socio-economic reform in 1986, livability became a 'norm' in urban development policies. As for Hanoi, this concept was first mentioned in its master plan publicized in 2011. A large number of housing projects are set up hastily and unceasingly along the peri-urban belts of the city, where KDTM (new urban area) developments appreciably improve both the quality and quantity of urban housing. From being a social welfare in the planned economy, housing has become a commodity traded on competitive real estate markets in the market-oriented economy. As livability of a KDTM is closely related to living conditions and effectively reflects its residents' perceptions, this paper analyzes the change of livability-forming viewpoint in new housing projects and provides updates on Hanoi-(re)making trends since 1954. By studying two cases (Linh Dam, with the 'KDTM Model' title awarded in 2009, and Ecopark, 'The best KDTM' title awarded in 2018), this paper also explores the differences among the ways of livability-making in KDTMs of Hanoi from plan(ing) to market(ing). Visualizations of the residents on how the respective livability aspects have been improved in these two KDTMs are also quoted and analyses done for such feedback explanation.

**Keywords:** Livability, Hanoi, New Urban Area (Khu Do Thi Moi - KDTM), Model (of) KDTM, Livable KDTM

11	171	Evaluation of Urbanites' Perception about Livable City Using Analytic Hierarchy Process (AHP): A Case Study of Dhaka City	Raisa Sultana
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*Raisa Sultana, University of Dhaka, Dhaka, Bangladesh*

*Afrida Asad, University of Dhaka, Dhaka, Bangladesh*

Urban livability, an implicitly and intensely debated concept, is extensively being used by the urban planners and policy makers for incorporating sustainable, inclusive city for all. But the conception of the term should not be rigidly limited under the boundaries of academics rather the perception of general people is highly necessary to diagnose the prime constraints for ensuring a livable city. Due to rapid and unplanned urbanization, Dhaka city has been experiencing extreme problems creating serious nuisance of urban livability. The objective of this study is to statistically evaluate the conception of dwellers of Dhaka city regarding the urban issues they face on regular basis as an impediment for ensuring livability. An individual resident's perspective has been studied qualitatively and purposively using Analytical Hierarchy Method (AHP) from 100 students of age group 19- 20 years. The factors influencing the livability on urban environment are studied under these parameters- Healthy Physical Environment, Economic Stability, Availability of Fresh Food, Transportation and Mobility, Utilities and Services Functionality, Social Equity and Justice, Accommodation Convenience and Quality Health Care. After analyzing, different factors under each issue were ranked. Major complications have been explored e.g. noise pollution, corruption, unhealthy food consumption, sexual harassment, water logging, unsafe and

insecure environment, lack of standard medical service, high house rent etc. which are creating the nuisance for Dhaka city’s livability and making Dhaka as the second least livable city in the world.

**Keywords:** Livability, Analytical Hierarchy Process (AHP), Livable city

12	38	Management of Public Space towards Livable city: The Case of Hanoi, and Lessons from Singapore	Nguyen Huong	Lien
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*PhD Candidate. Nguyen Lien Huong, Ha Noi Architecture University (HAU), Ha Noi, Vietnam*

This paper aims to focus on smart management of urban public space towards livable city. Along with the waves of digital and Information and Communication Technology (ICT) revolutions, Smart City model has become a global “hot” trend, and is expected to contribute to the livable city. The role of public space is universal, yet its functions and characteristics vary according to the particularities of the area and the community there. Public space sustains the productivity of the city and its social cohesion and inclusion, quality of life and local identity, and ultimately supports urban prosperity. Therefore, they should be planned and managed well and smartly for all kinds of users. Like many fast developing capital cities, Hanoi has been facing increasing challenges caused by market-based hyper-urbanization, which oftentimes neglects to provide adequate social space for residents. Spontaneous and uncontrolled rapid urbanization results in chaotic urban patterns. This research goes around a central question of how to manage public space in various ways including efficient space usage towards livable city. The research seeks international lessons that show way forwards, and lessons learnt from Singapore were chosen to introduce. The research adopts qualitative research methodology. The flow of the paper starts off with a review of the discourse on public space and its management, and explores the importance of public space in the city and how it can contribute to livable city. Then it introduces about urban development in Hanoi with a focus on the Historical metropolitan area as defined in the Primer Minister’s Decision 1259/QĐ-TTg, and its current situation regarding public space planning and management. Coming to the demonstration case study, this paper explores experiences and lessons from Singapore, which demonstrate ways to management of urban public space. At last, the paper provides some discussions, and concludes that inclusive stakeholder participation with local community involvement under a strategic partnership among public, private and academia can be a key to the success of public space planning and management towards livable city.

**Keywords:** Public space management, Livable City, Hanoi, Singapore

R5-T5-S5: 14:45 - 16:00 (Chaired by Rini Rachmawati)

13	157	Utilization of Personnel Management Information System (SIMPEG) Application to Support E-Government in the Personnel, Education and Training Agency (BKPP) at Palangka Raya Municipality	Puja Almira	Dania
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*Puja Dania Almira, Universitas Gadjah Mada, Yogyakarta, Indonesia*

*Bergita Gusti Lipu, Universitas Gadjah Mada, Yogyakarta, Indonesia*

*Aditya Widya Pradipta, Universitas Gadjah Mada, Yogyakarta, Indonesia*

*Rini Rachmawati, Universitas Gadjah Mada, Yogyakarta, Indonesia*

Dynamic city development produces opportunities for innovation in managing the government sector. Technological innovation in the governmental sector is implemented in the form of e-government. In the process of e-government, the government of Palangka Raya Municipality through Personnel, Education, Training Agency (BKPP) creates and implement The Personnel Management Information System (SIMPEG). The purposes of this research are to find out the application of SIMPEG in the local government and to identify the driving factors and inhibitors of its application. This research uses a qualitative descriptive method, where data is obtained from the results of in-depth interviews with employees responsible for implementing SIMPEG on BKPP. The research results show that the application of SIMPEG in the e-government of Palangka Raya Municipality could help in assessing the performance of the State Civil Apparatus (ASN), and also able to present information on each ASN staff in detail.

**Keywords:** E-Government, Personnel Management Information System (SIMPEG), Personnel, Education, Training Agency (BKPP)

14	149	Developing Smart and Sustainable Campus in Singapore	Nathaniel Lim & Aravind
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*Diganta Das, Nanyang Technological University, Singapore*

*Nathaniel Dylan Lim, National Institute of Education (NTU), Singapore*

*P. Aravind, National Institute of Education (NTU), Singapore*

The objective of this research is to find out the status of developing Singapore universities as a smart, green and sustainable campus. Singapore has effectively used Information Communication Technologies (ICTs) towards building a smart urban center by using it in almost every sphere of our everyday life. The nation intends to become a 'Smart Nation' through the use of smarter technologies and sustainable means to enhance better quality of life. In relation to developing a smart nation/smart cities, educational institutions and universities across the world are also trying to use technologies to create a sustainable campus to consume fewer resources such as power, water and to generate less waste. University campuses are also increasingly seen as places of innovation of new sustainable technologies, ideas and debates, and testbed for practicing and experimenting with those ideas. University students need to be aware of biodiversity, eco-citizenship, and roles that they can play in relation to climate change education. This research first, discusses the role of Singapore's Smart Nation

initiative in relation to the development of (smart) universities in Singapore. In particular, NTU’s development as a smart and sustainable campus. Secondly, by understanding the prevailing dimensions of the smart city discourse, a conceptual framework is developed to assess NTU as a smart and sustainable campus. Lastly, through a field study conducted on NTU’s main campus (Yunnan Garden Campus) the paper will report and discuss the findings on the current status of the university as a smart and sustainable campus, highlight salient issues and discuss the way forward.

15	109	Online Real Time (ORT) Waste Management through “Si Detektif Sampah” Application in Implementing Smart City in Palangka Raya City	Haddad Rasyid Sukawan	Al
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*Haddad Al Rasyid Sukawan, Universitas Gadjah Mada, Yogyakarta, Indonesia*

*Bias Osean Ali, Universitas Gadjah Mada, Yogyakarta, Indonesia*

*I Made Arya Widhyastana, Universitas Gadjah Mada, Yogyakarta, Indonesia*

*Rini Rachmawati, Universitas Gadjah Mada, Yogyakarta, Indonesia*

Waste management is the main concern in handling environmental problems in urban areas. This management includes transportation and processing of domestically generated waste. Palangka Raya city as the capital of Central Kalimantan Province is increasingly difficult to manage waste with the safety of misuse of trucks which causes an increase in landfill that cannot be transported and processed properly. Palangka Raya City Government through the Office of Public Housing and Settlement Area then developed “Si Detektif Sampah” (an Information, Detection, and Education System) application that displays route visualization for the most effective route transport transportation and route planning uses online real-time fleet control. This application is GPS-based which could be accessed anytime and anywhere and thus monitors waste transportation to carried out sustainably. The method used in this research is descriptive qualitative through in-depth interviews. The results of the study show that this application could cut the misuse of trucks to reduce landfill waste while implementing technology-based smart city in Palangka Raya City.

**Keywords:** Waste Management, Technology, Smart City

R8-T5-S6: 13:15 - 14:55 (Chaired by Pham Thai Son)

16	199	Urban Resilience and Inclusion of Smart Cities in the Transformation Process for Sustainable Development: Critical Deflections on the Smart City of Bhubaneswar in India	Biswajit Das
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*Biswajit Das, KIIT University, Bhubaneswar, India*

*Bhubaneswari Bisoyi, 1Sri Sri University, Cuttack, India*

*Suvankanta Mohanty, KIIT University, Bhubaneswar, India*

*Ipseeta Sathpathy, KIIT University, Bhubaneswar, India*

This research paper introspects on the aspects of urban resilience and inclusion in the smart cities of India and in particular Bhubaneswar. The strategic transformational outlay of cities for sustainable development leading to a systematic urbanization process has been argued for better urban governance. The aspects of urban eco-system relevant to the policies along with innovations have been envisaged with creative ideation. This research paper shall review on the literature and models of smart cities abroad, India and Bhubaneswar in particular for redefining and inventing a cutting edge concept for uniqueness. This research paper shall apply qualitative and quantitative data to refine an appropriate choice of attributes in a smart city. This paper shall critically analyze into the holistic approach of a smart city with a perspective to ecological sustainability crucial for urban residence in a growth-driven urban ecosystem. This study focuses on a number of facets that are considered for the edification of smart cities such as mobility, living, atmosphere, residents, government, and structural design in relation to the technological aspects. The dimension of urban resilience highlighting on different dimensions, area of application, challenges and prospects has been discussed in-depth in this research paper. This research paper reveals about the facets that strongly relates the concept of urban resilience with the transformation of smart cities leading towards sustainable development and also on the aspect of critical deflection.

**Keywords:** Urban resilience, Smart cities, Internet of things, Sustainable Development Goals, Technology Roadmap

17	31	Migration: An Element of Smart Livable Cities	Braj Raj Sinha
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*Braj Raj Kumar Sinha, Banaras Hindu University, Uttar Pradesh, India*

*Priyanka Thakur, Banaras Hindu University, Uttar Pradesh, India*

Movement of people from a defined geographical or administrative area to another with an intension to settle down there permanently is called migration. Migration is one of the important elements of smart livable cities because of its citizen-centric behaviour. All highly modernized ICTs, institutional, social, economic and physical elements are waste without smart people. In smart or smart livable city migrants as well as smart local citizens play an important role in enhancing the ICTs, inventing new tools and ideas to do better work performance. Migrants are quite open minded to work according to the plan and create a favourable work environment for themselves and others. Smart livable city being a centre of availability of resource opportunities pulls a large number of skilled migrants. Therefore, migrants being a source of creative force provide numerous opportunities to cope with the problems and tackle with

the obstacles of smart cities in smarter ways. This study aims at understanding the concept, meaning and different dimensions of smart livable city; highlighting the plans, policies and programs of the government in making the cities smart and livable; and demonstrating the role of migration in achieving and maintaining the status of smart livable cities. This paper is mainly conceptual in nature and based on the review of migration and smart city related literatures relevant to the present studies. The study is supported by the chart of different dimensions and components relating to migration and smart livable city.

**Keywords:** Migration, smart livable city, dimensions, information and communication technology

18	18	Digital Addressing of Historical City Morphology: The case of Lalitpur City in Kathmandu Valley, Nepal	Krishna Poudel
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*Krishna Prasad Poudel, Tribhuvan University, Kathmandu, Nepal*

*Suresh Shrestha, GeoSpatial Systems Pvt. Ltd, Kathmandu, Nepal*

Lalitpur Metropolitan City (LMC) covers 36 km<sup>2</sup> area, 68,353 households and 276,479 total populations constituted as a metropolitan in 2016 by the Government of Nepal. The core area of the city covers approximately 8 km<sup>2</sup> and comprised 70 % households, built in around 3rd century B.C. Digital metric addressing system is being implementing for the historical city morphology of Lalitpur City. In this process, a detail base-map of 1:2500 scale had been prepared from the high resolution stereo satellite imageries (0.32 m resolution) for the whole municipal area and 1:500 scale for the core city area with the large scale photographs acquired by unmanned aviation vehicle (UAV). The differential global positioning system (DGPS) and traverse leveling survey had been administered to attain positional accuracy to construct accurate base-map through the photogrammetric procedures. Base-map depicts detail surface features including contour of 1 meter interval, land-use, and road network, building footprint, major social and cultural land-scapes. From the detail field survey, every building unit with main doorway (entrance gate) was marked in the base-map. Distance from the road junction to the building doorway were computed and assigned each building/house number corresponding to the distance value in meter. Those numbers were designed in a system never repeats or duplicates to another house number. The whole process of exercise of digital metric addressing of historical city morphology provides an intensive practical lesson on recently developed space-place hybrid data integration, real ground-based large scale mapping and diverse city landscape applications. The shared experience may be referenced for the morphological studies in similar other historical Asian cities.

**Keywords:** Urbanization, Addressing, City morphology, Base-map

R8-T5-S7: 14:45 - 15:35 (Chaired by Le Anh Duc)

19	1	A Comparative Analysis of City Development Policies regarding Healthy, Livable and Sustainable Communities in Europe and Asia	Ana-Maria Talos
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*Taloş Ana-Maria, University of Bucharest, Bucharest, Romania*

*Zaharia Florin-Alexandru, Romanian Ministry of Transports, Bucharest, Romania*

The concept of “livability” has emerged alongside “sustainability” and “healthy” in the urban planning and political strategies. Many cities are transformed in order to be livable, sustainable and to have healthy communities. All the three concepts reflect various factors that add up to a community’s quality of life: educational opportunity, built and natural environments, economic prosperity, cultural, entertainment and recreation opportunities. While Asia region is experiencing rapid urbanization and environmental impact, Europe is trying to reduce emission and increase sustainability through strategies. The research examines comparative city strategies from Asia and Europe and reviews best practices for both of the regions. Moreover, the paper explores the role of optimal decision-making decisions, with a beneficial impact on the development of society. The approach of the problem was based on static conceptualizations of livability, exploring strategies for research and practice to enrich and transform the livability concept, and with it the places in which the lives and livelihoods of people unfold. Specific indicators related to access, transport, technology, structure were analyzed and correlated with a series of demographic indicators. The results of these analyzes have highlighted the importance of these three concepts (livability, sustainability and health), individually and in their interrelationship, in order to inform assessments and potential policies to promote them and any effort must be based on an understanding of underlying geographic and dynamic behaviors of society and its biophysical environment, as well as their interactions.

**Keywords:** public policies, livable and sustainable communities, healthy population

20	41	Smart and connected healthcare: Integrating health and health care into the smart city concept. Opportunities, challenges and barriers.	Liliana Dumitrache
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*Liliana Dumitrache, University of Bucharest, Bucharest, Romania*

*Mariana Nae, University of Bucharest, Bucharest, Romania*

Integrate health and health care into the complex system of a smart city will help city leaders and stakeholders to make better decisions about healthcare policy. Artificial Intelligence (AI), Machine learning, and Systems engineering will enable city authorities to address this area and to improve citizens health while minimizing costs. However, technology is an enabler, not the solution; cities are complex systems, with urban health outcomes dependent on many interactions. In order to improve urban population health as well as the quality of life, a more sophisticated approach, which integrates health care and other social determinants of health, is needed. As well, to integrate health care in the smart city concept, many actors/stakeholders need to be involved. The implementation status, the approaches, as well as implementation modalities of smart city, vary widely according to characteristics of city, region or country involved. A range of projects, implemented at an urban or national scale, in high or low-income countries from Europe or Asia outline, in a specific context, the role that urban planning policies can have in making health improvements. This paper discusses new models of health care

delivery as well as opportunities, challenges and barriers in the development of smart healthcare. Shaping cities for health, changing how the medical care is organized, practiced and delivered, changing the patient-physician relationship, emerging of new industry players are just some aspects that should be considered. In the same time, information systems and data architecture, the ethical dimension of different approaches, the connection between stakeholders and municipal systems are the main challenges.

**Keywords:** Smart city; smart health care; urban health

## THEME 6

Day 1: 28th November, 2019

R6-T6-S1: 11:15 - 12:30 (Chaired by Nguyen Quang)

1	29	Travel Behavior of Transit-Oriented Development (TOD) Neighbourhood Residents: A Study of Two Neighbourhoods in Shenzhen China	Zhu Qian
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*Zhu Qian, University of Waterloo, Ontario, Canada*

Transit-oriented development (TOD) has been widely considered as an effective urban development strategy and transportation planning instrument to address urban sprawl, land use segregation, traffic congestion and environmental degradation in cities. This study aims to assess TOD practice in Shenzhen by investigating how the TOD implementation has influenced residents' travel behavior at the neighbourhood level in the Grand Theatre Station area which is located in the old urban center and the Houhai Station area which is a newly developed area. The study finds that both areas have illustrated a significant increase in subway ridership. After comparing residents' travel behavior in these subway station areas, suggestions about reasonable mixture of residential and commercial types, better walkability and connectivity, and improved subway service qualities are raised for TOD neighbourhood development in the Chinese context.

**Keywords:** Transit-oriented development, travel behavior, TOD neighbourhoods, subway station

2	241	Re-structuring Urban Space of Hanoi City on the Basis of Urban Mass Transit Development	Nguyen Thi Thanh Mai
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*Assoc. Prof. Dr. Nguyen Thi Thanh Mai, National University of Civil Engineering, Hanoi, Vietnam*

*MSc. Eng. Nguyen Thi Mai Chi, The University of Tokyo, Tokyo, Japan*

The appearance of mass rapid transit in megacities like Hanoi is now changing current urban structure and land-use. According to experiences in many cities in the world, urban structure will transfer from central-core structure with spreading development on the basis of street networks designed for private vehicles to poly-centric structure with centrally development based on the public transportation framework, around stations in order to efficiently exploit transit services. Development potentials of these areas vary depending on the importance of transportation nodes, quality of connecting infrastructure and urban facilities, as well as the possibility of utilizing land value and job opportunities there. Classification of stations, transit hubs and affected areas will help policymakers to orientate the development of land, infrastructure, and urban services conforming with current conditions of each area. This paper initially studies about the theory and forecast of re-structuring Hanoi's urban space with the support of public transportation.

**Keywords:** Spatial structure, Urban transit hub, Transit Oriented Development (TOD)

3	239	Urbanisation vis-a-vis Environmental Pollution: An Overview of Metro Cities in India and Abroad	Gautam Kumar Basu
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*Dr. Gautam Kumar Basu, Jadavpur University, Kolkata, India*

*Dr. Devaleena Chaudhuri, Central Pollution Control Board Government of India, New Delhi, India*

*Dr. Animesh Halder, Kolkata Metropolitan Development Authority, Kolkata, India*

Urbanisation is inevitable so also migration of rural people from the hinterland of the city, due to better opportunity of employment, income and basic infrastructures. In a democratic set up, it is difficult to arrest the inflow of rural poor to the nearby city, unless some economic activity centers are set up around the periphery of the city through implementation of an efficient Regional Planning approach. Uncontrolled population growth, inefficient planning approach lead to unorganised and haphazard growth urban sprawls and consequently the unplanned urbanisation causes continuous deterioration of environmental component of the city in question, such as, ambient air quality, reduction of water resources and also worsening of water quality, loss of vegetation area and generation of uncontrolled solid and hazardous waste that are ultimately responsible for degradation of public health. Mention may be made that rural migrants entering into the city cannot afford conventional housing facilities because of inability to pay and as such they are forced to take shelter in Slums, Squatters settlements along canal banks, by the side of railway tracks etc. and even on pavements without basic amenities, as such their style of living causes environmental pollution by default.

This paper is intended to overview studies undertaken by different researchers on urbanisation vis- a - vis pollution and relying on their data base and logistic support to establish present field based findings and examine the field based evidences of probable causes of pollution as well as solution to minimise pollution on Metro cities of Kolkata, Mumbai in India and to compare it with other metro cities abroad, like, Beijing, Shanghai in China, Tokyo, and Osaka in Japan. Present work has been undertaken to prepare a check list for the Planners to consider during planning process, the environment parameters for minimising environmental deterioration.

**Keywords:** Anthropogenic, ecological, Urbanisation, environment, Air Quality

R6-T6-S2: 13:45 - 15:00 (Chaired by Yves Boquet)

4	188	Metropolisation in France and Its risks What Experience to Enhance Asian -European Common Exchange?	Philippe Grall
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*Philippe Grall, France*

*Martin Duplantier, France/Belgium*

*Bunthan Iea, Cambodia/France*

*Hà Anh Đức, Vietnam*

Thanks to the French experience, consequences and risks of metropolisation are analyzed, both for large cities and other urban areas in terms of quality of life, economic development, employment, land use and infrastructure issues in urban areas. The paper is gathering also, for discussion, different recommendations or hints in terms of balance between sustainable development, transportation, urban development projects, urban planning model.

**Keywords:** Urban planning, metropolisation, territorial balance, urban congestion, weak housing supply

5	148	Urban Migrant Labour: Public Spaces and Social Integration (Review on Studies in Vietnam)	Pham Quynh Huong
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*Pham Quynh Huong, Vietnam Academy of Social Sciences, Ha Noi, Vietnam*

*Hoang Linh Chi, Vietnam Academy of Social Sciences, Ha Noi, Vietnam*

*Nguyen Tuan Minh, Vietnam Academy of Social Sciences, Ha Noi, Vietnam*

*Luong Thuy Duong, Vietnam Academy of Social Sciences, Ha Noi, Vietnam*

*Do Thi Ngan, Vietnam Academy of Social Sciences, Ha Noi, Vietnam*

*Phan Thi Song Thuong, Vietnam Academy of Social Sciences, Ha Noi, Vietnam*

Urban migration is an indispensable tendency of urbanization. Migrant workers contribute much to the development of cities as well as welfare of communities and families. Based on analyzing research on four migrant workers including street vendors, industrial workers, domestic helpers, small-service sector workers, the article shows up a picture of living conditions, jobs and use of public spaces of migrant workers. The approaches and use of public spaces for their earn for living, relaxing and widening their social relations play a significant role toward social integration in their new destination. Research shows that unskilled migrant workers is a group suffering much discrimination in social relations and using public services. The differences among culture, lifestyles, and social prejudice as well as shortcomings in urban management policies are huge obstacles in social integration of migrant workers. Moreover, the article initially identifies factors motivating and hindering migrants' access and use of public spaces.

**Keywords:** Migration, rural-urban, unskilled labor, social integration, public spaces

*Zaima Sultana Promy, Khulna University of Engineering & Technology, Khulna, Bangladesh*

*Saima Rahman, Khulna University of Engineering & Technology, Khulna, Bangladesh*

Informal jobs mostly drop outside the field of Government's labour market regulation still it plays a vital role in the economic progress of developing countries like Bangladesh. These small-scale commercial activities usually originated in the public land with minimum security of occupancy and so, in last few years the involvement in this business has been significantly increasing at the cities of Bangladesh. At the same time, to ensure efficient flow of the pedestrian and vehicles in the city local Authority tend to evict the roadside informal structures. Therefore, the jangle between this wide section of economy and development policy of the local Authority's has been going on for a long time. This study has been evolved by conducting field survey and a close observation about working conditions, challenges and adaptation policies of roadside informal business holders in Khulna city of Bangladesh. Mostly, the people who are involved have a minimum level of academic knowledge and business skills as only 32% are studied up to secondary level. They tangled in this as a source of income or means of employment regardless of the challenges. Because of the challenges 65% are facing financial instability where earning of the vendors reduced from 5-28% per week. The structural change in business has been noticed as an adaptation strategy (mobile business structure increased up to 48% from 25%); also, to dodge the eye of the Authority vendors are tending to roam around the area rather than an even location for business. But despite of the uncertainty of the business people tend to stick as it ensures financial ease among the poor and middle-class people.

**Keywords:** Informal business, adaptation, regulatory policy, challenges, long term plan

7	173	Urbanization and Spaces of Marginalization in Relation to the Golden Quadrilateral Highway Project and Diamond Quadrilateral Railway Project in India	Vijay Kumar Baraikfl
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*Gloria Kuzur, Jawaharlal Nehru University, New Delhi, India*

*Vijay Kumar Baraik, Indira Gandhi National Open University, New Delhi, India*

India's primary pattern of regional development followed a 'z' pattern along natural routes of least resistance in the pre-colonial times. With the advent of the early colonizers, urban development was concentrated mainly around the port towns which followed a 'v' pattern. Among these three cities - Calcutta, Bombay, and Madras gained prominence and developed into major gateway port cities which became the foundation for the British colonizers to territorialize India into Calcutta, Bombay and Madras Presidencies. With Delhi becoming the capital of British India, the locus of urban developed focused subsequently on the four metropolitan cities of Delhi, Bombay, Calcutta and Madras which were positioned along four cardinal positions of the Indian landmass. India's regional growth strategies in the post reform phase has been emphasized along a marked quadrilateral pattern of urban and regional development with Delhi, Kolkata (Calcutta), Chennai (Madras) and Mumbai (Bombay) forming the nodes of the axis of the quadrilateral. The two advanced connectivity corridors, viz. Golden Quadrilateral Highway Project launched in 1991 and the proposed Diamond Quadrilateral Railway Project following a quadrilateral path joining the four metropolitan cities aimed at promoting focused and localized pattern of growth would be major condition in the spatial organization of the region. The objective of the paper is to study the pattern and nature of urban and regional development and map the new hierarchy of regions and spaces of marginalization along the Golden Quadrilateral Highway Project and the proposed Diamond Quadrilateral Project.

**Keywords:** Spatial organization, Regional Development, Golden Quadrilateral Highway Project, Diamond Quadrilateral Project

8	2	Airports and Metropolitan Development in East and Southeast Asia	Yves Boquet
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*Yves Boquet, Université de Bourgogne, Dijon, France*

*Globalization and air travel have grown in parallel in the last few decades. As the world gets more connected, the demand for airport capacity has greatly increased, to meet the needs of business and tourism. Most of Asia has witnessed the construction of new airports, which have grown to be as active as US or European airports.*

These airports have to meet the conflicting demands of business and tourism wanting them to be located as close as possible to the heart of metropolitan areas, the desire from airlines to be able to operate smooth round-the-clock schedules in easy-to-use and safe airports, while at the same time not impacting too much on the life of citizens complaining about aircraft noise. A review of the major airport projects of recent decades, in China, Japan, Korea and Southeast Asia, will examine the different types of airport location chosen, from seaside or island-based to rural locations, the type of land (or sea) access provided to the air terminals, and show the role that airports play in shaping the future of the

metropolis around the concept of aerotropolis. The last part of the paper/presentation will focus on the dilemma faced by Manila, Philippines, for the choice of an ideal new airport location.

**Keywords:** Aviation, metropolitan development, planning, land access, aerotropolis

9	25	Lack of Integrated Planning in Tribal People Development - An Action Plan to Save Nilgiris Tribe	Ar. Krithika. R
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*Ar. Krithika. R, SRM Institute of Science and Technology, Tamil Nadu, India*

*Dr.Sharmila Jagadisan, SRM Institute of Science and Technology, Tamil Nadu, India.*

Vernacular Architecture, the term widely used to denote indigenous architecture is the design environmentally responsive and culturally expressive. These vernacular settlements possess rich tradition of ecological knowledge that has been an integral component of sustainable living. These traditional practices which suggest best suitable solutions for functional utility and liveability has been transmitted through time and repeated over generations. However, in the modern world the vast repository of indigenous technology has been ignored and rapidly disappearing. We have been celebrating the International Day of the World’s Indigenous People on 9 th August every year. The key question that surface here is whether planning professionals integrate the cultural competency of the tribal people (emic views) in their practices and policies?

The authors have identified 3 tribal settlements - Todas, and Kotas in Nilgiris district in Tamil Nadu, India which are considered to be the “tribal ethnic zone” in the worlds of indigenous heritage. The purpose is to analyse and document the spatial and socio cultural factors like life style, culture, settlement pattern, occupation, materials and its construction techniques of Todas and Kotas settlement. This study maps out the missing link between the past and the present transitions at the settlement level as well as the unit level. It also helps us to re-explore the principles of the most meaningful “good practices” and tries to capture the broad spectrum of details and techniques followed by these settlements which seem abandoned or lost due to the large-scale induction of new construction materials and technologies.

**Keywords:** Vernacular, Integration, construction techniques, sustainable, emic views

10	144	Dependent Urbanization and Under development in Haryana: A Geographical Analysis	Naresh Kumar
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*Naresh Kumar, Jawaharlal Nehru University, New Delhi, India*

Urbanization in the third world is characterized by structural dependency, socio-economic differentiation and subtle changes in the economy. Structural transformation is a necessary condition for urbanization. Urbanization is at the core of development discourse, based on dominance and dependent relationship characterized by unequal exchange [commodities] with the rural hinterland. Urbanization and underdevelopment both are related. Underdevelopment does not mean the absence of development, but it means dependent, distorted and truncated development. Therefore, dependent urbanization and dependent development are complementary to each other leading to pseudo and parasitic urbanization and consequent underdevelopment.

The existing literature has not adequately explored the process of urbanization and its interface with the ongoing development process in Haryana. This paper attempts to understand the geography of dependent urbanization and underdevelopment in Haryana. It begins by problematizing urbanization and underdevelopment at two levels: In the first, it tries to contextualize the spatial history of urbanization and second the consequent underdevelopment process in Haryana. The analysis reveals that the urbanization in Haryana is top heavy and instead of diffusion, there is suction of resources of the periphery. This urbanization is leading to underdevelopment meaning thereby that the development is taking place but is not beneficial for regions lagging behind. Omission of the role of social-cultural capital(s) in the process of unequal exchange and underdevelopment has made most of the research one-sided. The present research attempts to bring in the role of these capital(s) within the ambit of unequal exchange and resultant underdevelopment process in Haryana.

**Keywords:** Dependent Urbanization, Geography of Underdevelopment, Structural change, Periphery, Haryana

11	158	Ho Chi Minh City's Urban Structure Historical Review Through the Residential Environments and Quality of Life	Nguyen Thi Ngoc Giang
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*Wei-I Lee, National Taiwan University of Science and Technology, Taipei, Taiwan*

*Ngoc Giang-Thi Nguyen, National Taiwan University of Science and Technology, Taipei, Taiwan*

This is a part of series research aiming to discover the residential issues of Ho Chi Minh City through the historical review on the development of the city and field survey on the different residential areas. We have summarized the types of residences and analyzed the urban structure of Ho Chi Minh city at first. Ho Chi Minh City (Saigon) is the most thriving city in Vietnam. The city was inhabited by Vietnamese since the seventeenth century, and it has been continually growing rapidly since the reunification of Vietnam in 1975. We found that Ho Chi Minh City has been greatly changing on the types of residences and also reorganizing the urban structure base on the rapid increase of population from 3.5 million in 1975 to more than 11 million in 2018. In this period, Ho Chi Minh City has conserved the traditional residential area, generated many illegal housing due to the influx of migrants, and also constructed many high-quality residences due to economic growth in recent years. The city has formed the current situation, diversified living patterns, deep differences and conflicts under the impact of legal and illegal, former and modern.

**Keywords:** Ho Chi Minh City, Illegal Housing, Residential Pattern, Saigon River, Residential Environments, Quality of Life

12	231	Urban poor vis-a-vis urban planning-an enquiry into choice of efficient planning technique	Animesh Halder
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*Dr. Animesh Halder, Calcutta Metropolitan Development Authority, Kolkata, India*

This study refers to Urban Planning and the target Populations are broadly divided into two groups- Rich and Poor- for whom the plan is being made. Urban Poor is generally classified according to their geographical location as “Pavement Dwellers”, “Squatters” and “Slum Dwellers”. The concentration of economic activities is their guiding force to decide their place of settlement. In developing countries with democratic set the rural urban migration is a universal phenomenon. The inevitable result of continuous rural-urban migration is either re-densification of exiting slums or proliferation of new ones- (squatter settlements) on vacant public land along canal banks and railway line and pavements of the city roads. By and large urban poor supply casual labour and majority of those households live below poverty line. They constitute more than one third portion of urban population; their services are indispensable to the society. Being Permanent Migrants or Long Term Circular Migrants they are permanent city dwellers. They are spatially immobile due to cycle of poverty and they cannot afford the cost of better housing.

This study finds that the Urban Planning by itself, even if it is holistic, inclusive and integrated in nature cannot ensure sustainable development of the city without simultaneous Regional Development Plan, as the continuous rural –urban in-migration is a significant exogenous variable to disturb the equilibrium of demand and supply of infrastructural facilities of a city in a developing country with democratic set up.

**Keywords:** Pavement Dwellers, Slum Dwellers, Squatters, Integrated Plan, Urban Plan, Regional Plan

13	230	Community Consultation in Drainage Planning, Flood Proofing, and Climate Change Adapting: Case of the Mekong Delta	Pham Quynh Huong
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*Pham Quynh Huong, Vietnam Academy of Social Sciences, Ha Noi, Vietnam*

Community consultation in the long-term planning has been mentioned in government regulars. However, the implementation is still quite limited. The popular consultation method is survey households with data on households, but lack information about the needs and desires of the community. In addition, lack of multidisciplinary coordination in the survey process. For example, cooperation between planning experts, infrastructure experts, sociological experts in a research group. It should be added that the planning experts and infrastructure experts lack skills in the method of sociological survey, lack of social survey experience in planning projects. This article wants to share experiences of community consultation with qualitative methods, which helps planning professionals obtain references in practical activities. This is a community consultation within the framework of the Mekong Urban Flood Proofing and Drainage Program. The project was conducted in 3 Mekong Delta cities including Long Xuyen, Rach Gia and Ca Mau, to assist cities in coping with and adapting to increasing flooding by improving data collection capacity, building flood risk models, adjusting water drainage planning and land use planning.

**Keywords:** Community Consultation, Urban planning, Climate change adapting; flood proofing, Mekong Delta

## THEME 7

Day 1: 28th November, 2019

R7-T7-S1: 11:15 - 12:30 (Chaired by Sigit Arifwidodo)

1	57	Upgrading Slums in India	Braj Raj Kumar Sinha
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*Braj Raj Kumar Sinha, Banras Hindu University, Varanasi, India*

Slums, the vulnerable spaces in the urban centers, lack fundamental resources and capabilities and result due to failure of policies, bad governance, corruption, inappropriate regulation, dysfunctional land markets, unresponsive financial systems, a fundamental lack of political will, rural-urban migration, urbanization, poor housing planning, poor infrastructure, social exclusion and economic stagnation, informal economy, poverty, politics, social conflicts, natural disasters, etc. Upgrading slums is a process of improving basic municipal infrastructure services such as access to potable water, sanitation, toilets, waste collection, access roads, paved foot paths, storm drainage, electricity, street lighting, public telephones, regularizing security of land tenure and affordable housing improvements, as well as improving access to health, education, training, food and nutrition, child care, transportation and other municipal services. Objective of this paper is to assess an improvement in various aspects relating to upgrading slums. This paper is based on the data collected from the Census of India, 2001 & 2011 and National Sample Survey 69 th Round conducted in July to December 2012. For the analysis of upgradation of slums a Composite Z score was calculated by employing important demographic and economic variables. Findings show some improvement in respect of road, water supply, street lights, electricity, latrine facility, sewerage, drainage, garbage disposal, educational facility at primary level and medical facilities over a period between 2007 and 2012. Spatial analysis shows a sharp regional difference in the level of slum upgradation in India. This paper is supported by the relevant cartographic representations.

**Keywords:** Upgradation, slum, urban centers, municipal infrastructure services, demographic and economic variables

2	125	Slums and Squatter Settlements and Affordable Housing in the Dhaka Metropolitan Area	Nurul Islam Nazem
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*Nurul Islam Nazem, University of Dhaka, Dhaka, Bangladesh*

*Shahana Sultana, University of Dhaka, Dhaka, Bangladesh*

Dhaka Metropolitan Area accommodates about 10 million people of whom at least 4 million live in about 3500 slums and squatter settlements of the City. About 80 percent of these settlements are owned by private owners who rent out their slum houses to the poor. Most of the slum dwellers are renters and pay very high as house rent as there is no institutional mechanism to control rent hike. Various studies show that the slum dwellers pay comparatively a higher amount as house rent per unit of area than the middle-income people. Even they pay more for the utility services than those are paid by the middle-income households. This is a paradox that the poor spend more than the middle and even the high-income people for housing, while their affordability is low. The paper examines this paradox taking example of poor readymade garment workers' housing provision in the slum areas of Dhaka. The Ready-Made Garment workers experience severe housing crisis, as their affordability is low. At present they spend about Taka 4,000 to 5,000 for about one hundred sq. ft of floor space in slum areas, which is equivalent to 20 to 40 percent of their total household income. Although they pay so high for housing, cannot afford to own

even a small unit due to high land price and cheaper credit facilities. The housing market is totally controlled by the private sector, where the government or institutional arrangements for making provisions for housing the poor are conspicuously absent. In such situation the poor face increasingly tougher challenges to own accommodation and survive in Dhaka Metropolitan Area.

**Keywords:** Slums, Housing Affordability, Rental Market, Institutional Arrangements, Urban Poor

3	23	Informality in the Southern City; An Enquiry into Informal Practices in Housing	Ruhamah Thejus
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*Ruhamah Thejus, Dalai Lama Institute, Bangalore, India*

As the Southern City continues to expand, much of the housing space created in it is termed informal. However, there is still much to understand about the range of informal housing - both in and outside the slum - in terms of housing tenure, what informal really means and how access to housing is negotiated. This paper aims to look at the ways in which informal housing is created and understood in the megacities of the Global South. It uncovers some of the actual practices followed to gain access to informal housing arrangements, with special reference to Bangalore in India. This access to housing is viewed in terms of its location across the city, the arrangements entered in to access it and the connectedness between housing and economic activity, enabling an understanding of the dynamics that create informal housing arrangements. A bifocal view of informal housing from academic and empirical perspectives is used to shed light on three important nuances in the understanding of informality of housing. The findings from the study shed light on the wide variety of legal and illegal arrangements that fall under the bracket of informal housing. It is hoped that these findings will contribute to a shift in the understanding of informality of housing in the Southern City, which can contribute to a shift in the legal and contractual environment, calling for more flexibility and creativity in the housing arrangements it allows for. Ultimately this paper will contribute to a better understanding of cities, and will highlight the fact that the city is not created by planners and managers only, but by every resident who inhabits it.

**Keywords:** Informal, Formal, Housing, Location, Arrangements, Southern

R7-T7-S2: 13:45 - 14:45 (Chaired by Pham Thai Son)

4	107	Status of Elementary Educational Facilities in Slums across Different States of India	Prabhakar Nishad
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*Prabhakar Nishad, J.P. University, Bihar, India*

*B.R.K. Sinha, Banaras Hindu University, Varanasi, India*

Education is an important ingredient of human resource development. It contributes to well-being of individuals by improving income and standard of living. Elementary education in India in general has shown considerable improvement over the past few decades but the educational level of slum residents in India is very low and there is an urgent need to improve the educational achievement of urban slums. The objectives of this paper are to i. find out the availability of government primary school in slums across different states of India, ii. analyze the improvement in condition of primary level educational facilities during 2007 to 2012 and iii. demonstrate the sources of improvement in condition of educational facilities at primary level in slums of India. The results shows about 59% of slums were within the distance of half km from government primary school. Improvement in educational facilities at primary level during 2007 to 2012 was reported by 30% of all slums, and “no improvement” by 57%. Less than 1% of slums at all-India level and 4% in West Bengal reported deterioration in the facilities. Out of the total improvement at primary level educational facilities in slums in India has been found by the effort of government of India and 17% by NGOs, however, some variation has also been noted across different states of India.

**Keywords:** Slum, Elementary Education, Educational Facilities, Source of Improvement

5	244	Design Research on Sustainable and Affordable Housing for Viet Nam	Ngo Le Minh
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*David Rockwood, University of Hawaii, Hawaii, U.S.A*

*Le-Minh Ngo, Ton Duc Thang University, Ho Chi Minh city, Viet Nam*

*Tran Minh Duc, University of Architecture, Ho Chi Minh City, Viet Nam*

This paper outlines design research aimed at addressing the need for affordable and sustainable housing in Viet Nam. Foreign capital infusion has produced internal migration due to the transition from an agricultural to an industrial/service economy. Around 10 million Vietnamese have recently relocated to urban areas, and this trend is expected to continue. Newly arrived immigrants typically seek entry-level employment and are challenged to afford housing meeting minimum standards. Finding a solution to housing immigrants is critical to the economy and to manage the health and welfare of people. Recent housing has focused on the market rate segment as investors are able to return greater profit. To respond to the lack of affordable housing, the Vietnamese government has led initiatives aimed at providing incentives to investors and occupants. The authors, working from 2014 - 2019 with lecturers and student design researchers have investigated the affordable and sustainable housing problem. Design Research methodology was employed using following steps: (a) Research and documentation of Vietnamese urban infrastructure, planning, housing, and construction, (b) Formulation of housing design criteria, including affordability, sustainability, resilience, and social needs, (c) Design of prototype housing blocks, (d) Evaluation of the prototypes and comparison of the results based on their performance relative to the design

criteria. The resulting prototypes and the evaluation of their merits point out potential new techniques, strategies, and design solutions. We believe this investigation is a promising first step to find more optimal solutions to the current and ongoing Vietnamese affordable and sustainable housing problem.

**Keywords:** Housing, Urban-Immigrant, Sustainable, Affordable, Resilient, Viet Nam

6	108	Concepts, Status, and Progress of Affordable Housing in Urban India	Braj Raj Kumar Sinha
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*B.R.K. Sinha, Banaras Hindu University, Varanasi, India*

*Prabhakar Nishad, J.P. University, Bihar, India*

Very high prices of land and real estate in urban areas have compelled the poor and the economically weaker sections of the society to occupy the marginal lands with poor housing conditions in combination with congestion and lack of basic amenities. For the urban poor, the cost of affordable house should not exceed five times the household gross annual income and the EMI/rent should not exceed 30 per cent of the household's gross monthly income. As a result, providing affordable housing is a daunting task, particularly when the cost of building materials and land prices are on the rise. The objectives of this paper are to: i. throw light on the concept of affordable housing with special reference to India, ii. find out shortage of affordable urban housing among different economic categories, iii. demonstrate variation in the spatial pattern of shortage of affordable urban housing in India, iv. map out progress of 'Pradhan Mantri Awas Yojana (Urban) - Housing for All' across different states in India, and v. point out problems and its possible solutions relating to affordable housing for urban poor in India. Findings show that 88% of total shortage of affordable urban housing belongs to Economically Weaker Sections (EWS) and 11% for Lower-Income Groups (LIG). There is state wise variation in the shortage of affordable housing in urban India. The present rate of growth of PMAY-Urban is very less. Therefore, there is need for accelerating the present growth rate to achieve the target of building 18 million houses.

**Keywords:** Pradhan Mantri Awas Yojana, Urban Poor, Affordable housing, Economic Categories, Growth Rate

7	213	Social Housing Development in Ho Chi Minh City, Vietnam: From Policy to Practice	Pham Thai Son
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*Thai Son PHAM, Vietnamese-German University, Binh Duong, Vietnam*

Since the implementation of Renovation policy in 1986, Vietnam has been experiencing a transition period from a state-planned to a market-oriented economy. The transformation has its major implications in all development sectors of the country, including a significant reform in housing policy. As a socialist legacy in housing sector, social housing is an integral part of the country's housing development strategy despite its current limited outcomes.

Based on extensive working experience with technical departments of Ho Chi Minh City and analysis on various secondary documents on housing development in Vietnam, this paper aims to explore the social housing as a measure of central and provincial governments to help poor and vulnerable groups in urban areas in Vietnam. In the literature review on social housing concept and policies across countries, the paper highlights five dimensions of social housing policy including Planning, Land, Finance, Procedure and Investment (PLFPI). The papers then summarize legal framework and policies regarding social housing in the transitional context of Vietnam and pointing out how Vietnamese authorities were confused about the social housing concept. Evidence also suggests that the government is enhancing support to supply-side of this housing market segment but the demand from low-income groups is not equally subsidized. Subsequently, the paper provides an in-depth analysis on the PLFPI dimensions in Ho Chi Minh City and shows that the outcomes of social housing development are far from the authorities' expectation because of planning weakness, insufficiency of land availability, lack of financial resource

from public budget, complicated procedures of social housing development project and relatively unattractive investment policies. The paper concluded that if there is no major improvement, the social housing program will be a big failure in the process of urban development and proposes integrated approaches and initiatives for social housing development with broader implications that go beyond the single case of Ho Chi Minh City.

**Keywords:** social housing, housing policy, urban development, Ho Chi Minh City, PLFPI

8	61	Urban Low-Income Housing in Thailand, Reflection of Thai Democratization. The Case of 'We Care Housing Project' and 'Secure Housing Project'	Kitapatr Dhabhalabutr
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*Kitapatr Dhabhalabutr, Khon Kaen University, Khon Kaen, Thailand*

In 2003, the Thai government ambitiously planned to deliver one million low-cost housing units by 2008. The government assigned the National Housing Authority (NHA) to deliver 600,000 We care housing program (Baan Eua-Arthorn or BEA) low-cost subsidized units and the Community Organization Development Institute (CODI) to deliver 300,000 Secured housing program (Baan Mankong or BMK) slum improvement units throughout Thailand. This paper observes that Thai political and democratic evolution to its present conundrum provides a framework for the reading of the housing projects. The paper utilizes anthropologist Neils Mulder's notion of Thai culture to frame and read contemporary forms and practices of democracy. The major finding of the paper is the conflicting character of Thai democratization, embedded in the 1997 is manifested in these two contrasting public mega-projects. The top down and fast-track 'We care housing project' is responsive to policy-driven electoral democracy. In contrast, the bottom up practice of 'Secure housing project' reflects participative democracy and involves complex, difficult processes of stakeholder empowerment and collaboration which does not synch with election cycles.

**Keywords:** Democratization, Thai urban low-income housing, We care housing Program, Secure housing Program

9	59	Urban Housing Policy in India: An Evaluation of Ashiana Scheme in the Planned City of Panchkula, Haryana, India	Sheena Chadha
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*Sheena Chadha, Panjab University, Chandigarh, India*

The present study is an attempt to evaluate the performance of Ashiana scheme for Below Poverty Line (BPL) category in Haryana in the light of environment sustainability. This scheme was launched by the Haryana Urban Development Authority (HUDA) in December 2010 under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the Integrated Housing and Slum Dwellers Programme (IHSDP). The study is undertaken in the North- Indian planned city of Panchkula, located in the state of Haryana with the objective to assess the performance of urban basic services. The study is based on both primary and secondary data. The primary data has been collected by observation method, questionnaire for the citizens and interview for the officials. The secondary data has been sourced from various reports of Government of India, national and international journals, and comprehensive urban housing plans. The study has found that lack of environment sustainability in urban housing planning is due to urban basic services such as water supply, solid waste management, sewerage and drainage system and mobility and transport planning. Thus, for achieving environment sustainable urban services, there is a need to make efforts towards the services and improve its maintenance undertaken by Municipal Corporation and citizens of Ashiana society. The study concluded with suggestive solutions to improve services itself so that it can win the confidence of its people.

**Keywords:** Urban Housing Policy, Ashiana Scheme, Urban Basic Services

10	180	Intergenerational Perspective on Right to the City in relation to Changing Nature of Social Contracts in the Slums of South Delhi	Swagata Basu
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*Swagata Basu, SSV (PG) College, Hapur, India*

*Gloria Kuzur, Jawaharlal Nehru University, New Delhi, India*

Slums are an outcome of dependent urbanisation process in most of the post-colonial countries. The nature of dependence was such that it syphoned off indigenous resources to subsidize the development of the metropolis at the cost of it's own population. Deteriorating economic conditions along with growing population pressure compelled the urban settlers to compromise on the quality of environment, comforts, dignity and security that became precarious over time.

Drawing from Lefebvrian concept of 'Right to the City'; this paper attempts to chart the intergenerational shifting-goalposts of expectations of new social-contract among slum dwellers regarding their rights to affordable housing, privacy and security of the most vulnerable sections of inhabitants (children, women, senior citizens and differently-abled persons) of Kusumpur-Pahari, New Delhi. The study area is a spatially compact, yet socio-culturally layered slum juxtaposed with affluent neighbourhoods, state of the art shopping malls dotted with ultra modern housing colonies of foreign diplomats and the bureaucrats in it's vicinity. The concept of 'congestion' expressed in terms of availability of exclusive rooms for married couples within the question of 'housing inadequacy' is explored through in-depth interviews of the residents of the slum. The first generation settlers' struggles to create a 'socially just city' find articulation in the aspirations of the formally educated younger generation of slum dwellers who express their desire to be a part of the decision making process of city building just as they create the 'oeuvre' of the city through their quotidian practices of the production of urban space.

**Keywords:** Urban Slums, Housing Inadequacy, Congestion, Right to the City, Socially Just City

## THEME 8

Day 1: 28th November, 2019

R8-T8-S1: 11:15 - 12:30 (Chaired by Le Thi Thu Huong)

1	121	A New Inner-Hanoi via Residentializing Old Industrial Facilities: From Urban Renewal to Reurbanization, and Urban Regeneration	Tran Minh Tung
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*Minh Tung Chan, National University of Civil Engineering, Ha Noi, Vietnam*

*Tien Hau Phan, National University of Civil Engineering, Ha Noi, Vietnam*

*Ngoc Huyen Chu, National University of Civil Engineering, Ha Noi, Vietnam*

Urbanization in Vietnam is closely linked with administrative, spatial, economic, population, and welfare transition. With the radio-concentric form, in addition to continuous peri-urban transformations to create new urban fringe belts, inner-Hanoi is witnessing new significant conversion of old housing areas, old industrial facilities, old public facilities, and old specific functional areas which can no longer meet current needs of the city. Through reviewing a summary of the urban renewal legislation process and land readjustment in Hanoi from central and local governments' viewpoint, and considering ten typical projects for old industrial facilities conversion during the last ten years, the trend of 'residentialization', and other '-izations/-fications', was analyzed and clarified by comparing specific elements in Hanoi's development context related to both opportunities and values of these old industrial facilities. These '-izations/-fication' are seen as the first and important signs of urban regeneration in (inner-)Hanoi: Does the city need be proactive in making forecasts and systematic legal completing instead of a mass of privatized urban renewal projects initiated by individual project owners?

**Keywords:** Hanoi, Urban Renewal, Urban Regeneration, Reurbanization, Residentialization

2	22	From Welfare to Participation - The Changing Narratives of Slum Rehabilitation and Housing for the Urban Poor in Delhi	Ushosee Pal
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*Ushosee Pal, Jamia Millia Islamia University, New Delhi, India*

Slum evictions and resettlement colonies have been a part of Delhi's urban history since the late 1950s. As the central space of political power and administration, Delhi's history of political contestations has shaped its housing practices pertaining to the urban poor. Post-colonial Delhi prior to liberalization of the Indian market saw housing for the urban poor as a 'welfare benefit' to be provided to the low-income groups with the help of the civil society. Neoliberal Delhi views the same benefit as an opportunity for a 'slum free' city with 'world class' infrastructure by way of public private participation. What were the processes which brought about this shift in the narrative and approach of housing and urban redevelopment in Delhi? The advent of the market in housing for the urban poor is a fairly recent phenomenon with its own peculiarities. The present work analyses the neoliberal turn in housing for the urban poor in Delhi through its housing policies, plans and an ethnographic case study of its pilot in-situ slum rehabilitation project under public private participation in Kathputli Colony. It attempts to review the stronghold of the state-market nexus in development of lower income groups and consequent problems of inclusivity and right to the city.

**Keywords:** Slum rehabilitation, housing, urban redevelopment

*Ha Minh Tri, International University, Ho Chi Minh City, Vietnam*

*Tran Hoang Nam, Vietnamese-German University, Binh Duong, Vietnam*

*Nguyen Mai Trung, People's Committee of Ward 15, District 8, Ho Chi Minh City, Vietnam*

*Le Dinh Minh Tri, International University, Ho Chi Minh City, Vietnam*

Public participation in government decisions has been crucial and greatly leads to the development of grassroots democracy. This study reviews the degree to which local citizens are involved in local government decisions in District 8 of Ho Chi Minh City. A survey that uses questionnaire with a sample of 640 assesses public participation in District 8. The questionnaires also examined the perceptions of citizens about these initiatives and expectations of greater empowerment of citizens. The results show that local people want to be involved in local government decision-making.

**Keywords:** Decision making, Ho Chi Minh City, local government, public participation

R8-T8-S2: 13:45 - 15:00 (Chaired by Nguyen Luu Bao Doan)

4	198	Comparative Study of the Patterns and Characteristics Urban Morphology of the Old City, Bengkulu and Singapore that has relation to Historical Background	Fitrianty Wardhani
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*Fitrianty Wardhani, University of Bengkulu, Bengkulu, Indonesia*

*Samsul Bahri, University of Bengkulu, Bengkulu, Indonesia*

Urban morphology is an applied science that learns about the history of the spatial patterns of a city and learns about the development of a city. The old town area of Bengkulu was an English-built city from 1719 while Singapore was a British formation city as well, due to the London Treaty agreement occurring between the two regions. This Paper aims to be a comparison study between two cities with historical linkages in terms of identifying patterns and characteristic of its city morphology. This research is quantitative descriptive research using two analytical techniques namely diachronic reading and Tipo-morphology. The indicators used to acquire patterns and characteristics of the urban morphology are Bengkulu and Singapore which are aspects of detail consisting of buildings and materials, road and block patterns, land use activities and open spaces. The second indicator is a city layout aspect consisting of spatial patterns and environmental compositions awakened. Through this research is expected to get similarities and differences in the patterns and characteristic the morphological of both cities. This study will provide an overview and input for the development planning of the more advanced city of Bengkulu.

**Keywords:** Comparative studies, urban morphology, history

5	99	Breakthrough to Promote the Urban Economy of Vietnam Urban System in the Forthcoming Period	Nguyen Quoc Toan
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*Nguyen Quoc Toan, National University of Civil Engineering, Ha Noi, Vietnam*

*Dao Thi Nhu, Urban development agency, Ha Noi, Vietnam*

Urban area is considered as a main contributor (up to 70-80%) to economic sector and GDP growth of each country. In Vietnam, the contribution from these areas has witnessed up to 70% of gross domestic product (GDP). Therefore, it is extremely important to set up urbanization policies and strategies in order to maximize the economic promoting role of urban areas. Recently, Vietnam's ineffective urban development model mainly focusing on spatial organisation structure but paying less attention to economic space arrangement and management driven by the market has constrained cities' GDP contribution as well as strong growth. By reviewing the situation, characteristic and process of Vietnam urbanisation recently, the article draws lessons learned about the relationship between the urbanization process and the economic contribution role of the urban areas. The article then comes up with breakthrough suggestions to promote the role of the urban economy in the forthcoming period.

**Keywords:** Breakthrough, Urban economic, Vietnam urban system

6	48	Studying Urban Expansion and Landscape surrounding Monuments for Conservation the World Cultural Heritage in Hue City - View from GIS and Remote Sensing	Dinh Thi Dieu
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*Dinh Thi Dieu, Vietnam Academy of Science and Technology (VAST), Ha Noi, Vietnam*

*Van-Manh Pham, VNU University of Science, Ha Noi, Vietnam*

The Socio-economic development and the growth of urban population are direct cause putting pressure for air quality, noise, and quality of life. The Cultural Heritage in the world is under the influence of urbanization and tourism activities due to the growing of hotels, restaurants, and associated services. This has a direct impact on the landscape of Heritage with many cultural values. Huế City is recognized as a world cultural heritage since 1993 by UNESCO. This is the only heritage urban in Vietnam composed of three elements (i) heritage site, (ii) urban, (iii) landscape (including Green Space), and not out of the impact of urbanization and tourism development. This paper focuses on quantifying the im-pact of urbanization and tourism development to the changing landscape of heritage sites in Huế by using all the data of remote sensing, statistical and spatial analysis tools in GIS. The results showed a positive relationship between the in-creases in population, developing tourism infrastructure with the expansion of urban land and thus causes deterioration of Green Space - landscape space of the world cultural heritage. From that we can see the trends of spatial changing can affect the quality of life and the tourism industry in the future of Huế city.

**Keywords:** Spatial analysis, Urbanization, Tourism development, Heritage con-servation, Changing landscape

Day 2: 29th November, 2019

R8-T8-S3: 10:45 - 12:00 (Chaired by Ngo Le Minh)

7	15	Conceptual Solutions for the Renewal of Unused Open Spaces: Case Study of Ho Chi Minh City, Vietnam and Bangkok, Thailand	Le Thi Thu Huong
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*Le Thi Thu Huong, Vietnamese-German University, Binh Duong, Vietnam*

*Kieu Thi Le, Vietnamese-German University, Binh Duong, Vietnam*

In the context of rapid urbanization, big cities in Southeast Asian are facing a lack of green spaces, especially in the inner city, which negatively impacts on living quality of their citizens. The traditional way to solve this is to seek for vacant lands to develop green spaces; however, it is not applicable when land availability becomes more and more limited. Instead, another alternative is to review the usage of the existing open spaces, especially those under road infrastructure, and figure out the opportunities to optimize their capacities for green development as well as for certain public functions. With this approach, this paper aims to carry out a case study research on the open spaces under roadways, then identify the opportunities for renewal or development in order to propose some conceptual solutions. Due to the similarities in urban density, demands for green spaces, as well as potentials to optimize the usage of unused spaces under roadways in the cities, Ho Chi Minh City, Vietnam and Bangkok, Thailand are chosen as case studies in this paper. The study finds out that in both cities, many spaces under the bridges and highways can be redeveloped to become the public green spaces, of which some even can have additional functions. Certain conceptual solutions are proposed for the selected spaces to diversify their landscape as well as improve their functions. The solutions, even though at the conceptual stage, ultimately will help increase the cities' greenery to improve their environment.

**Keywords:** Open Space, Ho Chi Minh City, Bangkok

8	85	How Far It Reaches? Examining the Notion of Resilience Travelling through the Process of Planning to Practices - Two Waterfront Resilient Projects in the Central District of Taichung, Taiwan	Peiwen Lu
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*Peiwen Lu, National Changhua University of Education, Changhua, Taiwan*

*Sheng-Yu Yang, National Changhua University of Education, Changhua, Taiwan*

*Lihsiung Lin, Taichung City Government, Taichung, Taiwan*

The notion of resilience and resilient cities have gained increasingly attentions and interests over recent years – not just confined to academic discourses but also prevalent in conducting development projects of urban planning. The article argues how the notion of resilience is embedded and transferring to practices in planning. It focuses on urban reform leading by waterfront resilient projects in the central district of Taichung. Data collection is based primarily on interviews in supplementary by policy reviews and participatory observation. The result indicates that the government and the local residents acknowledged the success of the resilient projects by creating better quality of the public space. The notion of resilience as a discourse is one of the resources that policymakers use to form more powerful framework of collaboration. Policymaking is very sensitive to the 'real' needs. The travels of the notion in policymaking ends as a discourse. However, its formed framework contributes to the practices continually and pushed urban redevelopment – the real local needs – a little step forward.

**Keywords:** Planning policymaking, resilience, Taichung, urban redevelopment, waterfront

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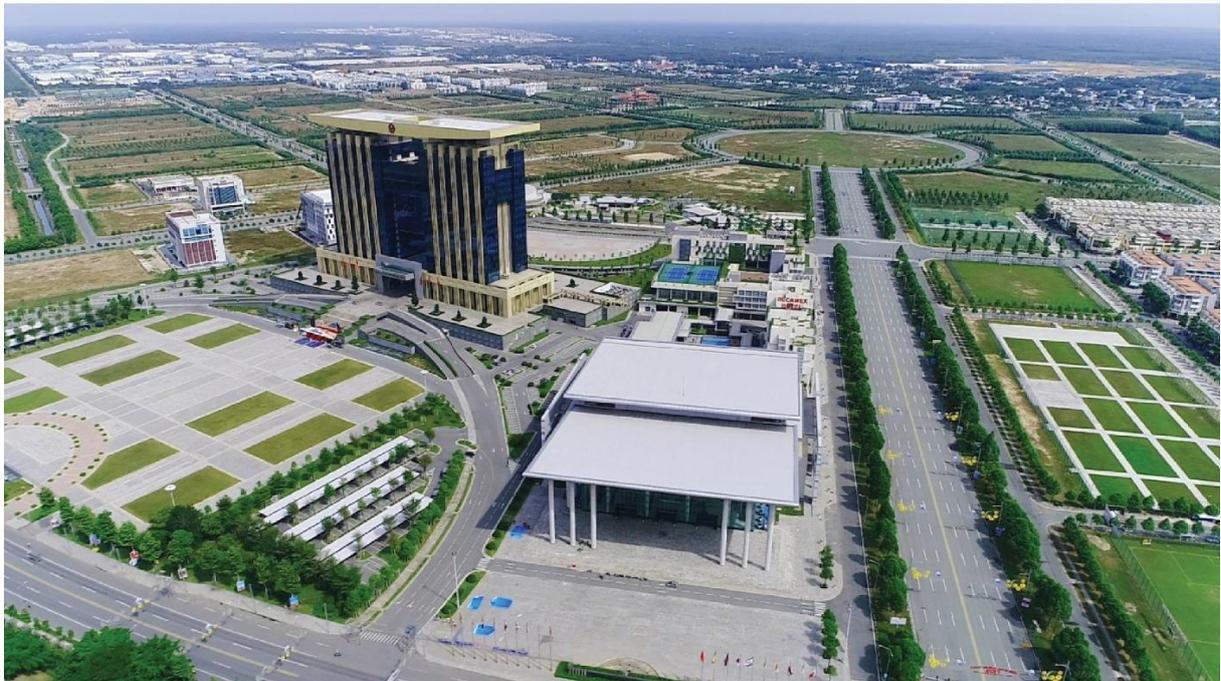
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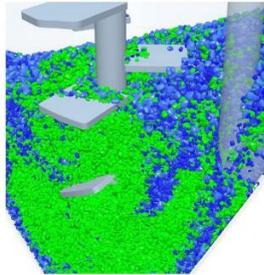
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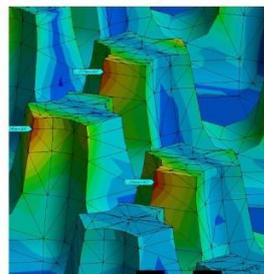
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