COMING TOGETHER EVENT FOR PHDs & POSTDOCs WORKING on CITIES

City+

**A Coming Together Event
for PhDs and Postdocs Working on Cities &
A Martin Centre 50th Anniversary Celebration Event**

Lecture Room 1, Department of Architecture,
University of Cambridge, 1-5 Scroope Terrace
Cambridge CB2 1PX

23 / Sep / 2017 / Saturday

The Martin Centre
for Architectural
and Urban Studies

UNIVERSITY OF
CAMBRIDGE

City+

A Coming Together Event for PhDs and Postdocs Working on Cities

Date: Saturday, 23rd September 2017, 9am-6pm

Venue: Lecture Room 1, Department of Architecture, University of Cambridge

1-5 Scroope Terrace, Cambridge CB2 1PX

Introduction

The one-day event aims to establish an interdisciplinary network for research students and early career researchers in urban studies and related fields. City+, as the theme of this event, represents a rich variety of possibilities to understand cities and to address increasingly complex urban concerns from multiple perspectives.

City+ will bring together participants to present and debate their work in a welcoming and stimulating environment. Regardless of what stage you are as a PhD student or an early career researcher, this event will be an excellent opportunity for you to share your ideas, receive invaluable feedback, and develop your own network with fellow researchers working on issues of mutual interest.

Organised by

Tianren Yang, University of Cambridge & City+ Group

Yongping Zhang, University College London & City+ Group

Sponsored by

School of Arts and Humanities, University of Cambridge

The Martin Centre for Architectural and Urban Studies, University of Cambridge

Academic Advisory Board

Professor Marcial Echenique (Cambridge), Dr Deborah Potts (KCL), Dr Ying Jin (Cambridge), Dr Yeonsook Heo (Cambridge), Dr Chen Zhong (KCL), Mengqiu Cao (UCL), Dr Zhifu Mi (UCL) & Yang Song (KCL)

Programme – 23 September, 2017

8.30	**Registration (Gallery)**
9.00	<mark>**Welcome and Introduction (Lecture Room 1)**</mark> • **Professor François Penz** (Incoming Head of Department of Architecture, University of Cambridge) *Opening address* • **Tianren Yang** and **Yongping Zhang** (City+ Group) *Introduction*
9.15	<mark>**Keynote**</mark> • **Professor Marcial Echenique** (University of Cambridge) *On theories, models and planning*
9.30	<mark>**Session 1: Urban Equality and Right to Cities**</mark> • **Chair: Dr Deborah Potts** (Department of Geography, King's College London) *Session Introduction*
9.35	**Session 1 - Paper Presentations (12min each)** • **Roberta Sakai** (Brazil Institute, King's College London) *Urban policy diplomacy in 2016: Habitat III and the emergence of the right to the city agenda* • **Alexander K. Eduful** (School of Geography and the Environment, University of Oxford) *Consumption and right to the city: Accra's (Ghana) shopping malls as new spaces of urban consumption* • **Yang Song** (Department of Geography, King's College London) *The disappearing urban villages -- A case study of Chinese migrants' encounters in the process of urbanisation*
10.15	**Session 1 - Q&A**
10.35	**Session 1 - Illustrative Short Presentations (5min each)** • **Hikmah Kamarudin** (School of Geography, Earth and Environmental Sciences, University of Birmingham) *Physical access for disabled people's inclusion in the city centre*

	• **Concepcion Rojas** (Department of Architecture and Built Environment, University of Nottingham) *Detached places: Informal settlements* • **Yasser Khaldi** (Edinburgh School of Architecture and Landscape Architecture, University of Edinburgh) *Urban Regeneration and Resilience: Evaluating the Impact of Regeneration Projects on Social Resilience in Glasgow's Sighthill* • **Naeemah Yusof** (Centre for Urban and Regional Studies, University of Birmingham) *Rights of older citizens in a walkable city: A case study in Birmingham city centre*
11.00	**Refreshments**
11.20	<mark>**Session 2: Urban Mobility, Regeneration and Housing Studies**</mark> • **Chair: Dr Ying Jin** (Martin Centre for Architectural and Urban Studies, University of Cambridge) *Session Introduction*
11.25	**Session 2 - Paper Presentations (12min each)** • **Mengqiu Cao** (Bartlett School of Planning, University College London) *Examining the social impacts of urban transport equity – towards new approaches* • **Kezhen Hu** (School of Geography and the Environment, Oxford University) *EVs in bus lane - a simulation of the controversial incentive* • **Arooj Khan** (School of Geography, Earth and Environmental Sciences, University of Birmingham) *Maps, regeneration, civic identities: Including children and young people in regenerating Tilbury Town* • **Jaime Royo Olid** (POLIS - Centre of Development Studies, University of Cambridge) *Housing financialisation in India: How useful are alternative 'scarcity principles' to explain the dynamics?*
12.15	**Session 2 - Q&A**
12.35	**Session 2 - Illustrative Short Presentations (5min each)**

	- **Delia Murguia Gutierrez** (Edinburgh School of Architecture and Landscape Architecture, University of Edinburgh) *Challenges to achieving sustainability in social housing in Leon, Mexico* - **Phan Duy** (Centre for Urban and Regional Studies, University of Birmingham) *Resilient Transport System to mitigate flood impacts in coastal cities: a case study of Ho Chi Minh City, Vietnam* - **Chien-Ling Lo** (Bartlett School of Planning, University College London) *Urban regeneration and its role on market sustainability: A case study of Manchester*
12.55	**Buffet Lunch**
14.00	<mark>**Session 3: Urban Environment and Energy**</mark> - **Chair: Dr Yeonsook Heo** (Department of Architecture, University of Cambridge) *Session Introduction*
14.05	**Session 3 - Paper Presentations (12min each)** - **Dr Zhifu Mi** (Tyndall Centre for Climate Change Research, University of East Anglia) *Consumption-based emission accounting for Chinese cities* - **Tara Hipwood** (School of Geography and Planning, Cardiff University) *Tales from the City: Intersections between the urban environment and owner-occupier low carbon retrofit* - **Alizara Juangbhanich (Lisa)** (Bartlett School of Planning, University College London) *How and why do private developers engage in green building practice? The case of Bangkok, Thailand* - **Daniel Tubridy** (Department of Urban Studies and Planning, University of Sheffield) *New infrastructural aesthetics: case studies of design-led urban stormwater management*
14.55	**Session 3 – Q&A**
15.15	**Session 3 - Illustrative Short Presentations (5min each)** - **Dr Fred Sanders** (Architecture Faculty, Delft University of Technology) *Circular cities by the energy of people*

	• **Yiting Zhang** (School of Geography, Earth and Environmental Sciences, University of Birmingham) *Urban morphology and green space: a historico-geographical approach* • **Weiduo Zhou** (School of International Department, University of East Anglia) *The development of low-carbon development in Xiongan New Area and its construction strategy: Based on the development practice of the Shenzhen Special Economic Zone and the Shanghai Pudong New Area, Binhai New Area* • **Ling Min Tan** (Department of Civil and Structural Engineering, University of Sheffield) *Understanding and formulation of the spatial effect of city economic and energetic characteristics on their resources consumption*
15.35	**Refreshments**
15.55	<mark>**Session 4: Urban Analytics and Smart Cities**</mark> • **Chair: Dr Chen Zhong** (Department of Geography, King's College London) *Session Introduction*
16.00	**Session 4 - Paper Presentations (12min each)** • **Roxana Karam** (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh) *Data value in smart city planning* • **Zahratu Shabrina** (Centre for Advanced Spatial Analysis, University College London) *An overview of Airbnb spatial configuration in Greater London Area* • **Dr Xuan Sun** (Nankai University & University of Glasgow) *Multi-level semantic modelling of 3D urban building space* • **Dr Jianzheng Liu** (Department of Land Economy, University of Cambridge) *Visualizing the intercity correlation of PM2.5 time series in the Beijing-Tianjin-Hebei region using ground-based air quality monitoring data*
16.50	**Session 4 – Q&A**
17.10	**Session 4 - Illustrative Short Presentations (5min each)**

	• **Dr Li Wan** (Martin Centre for Architectural and Urban Studies, University of Cambridge) *Urban spatial equilibrium models - a personal perspective* • **Chaowei Xiao** (Department of Land Economy, University of Cambridge) *Using big data sets and spatial dynamic metrics to analyze the population's spatio-temporal patterns of Shanghai* • **Hannah Kaner** (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh) *Placing the 'Home': Orienting Interaction within the Smart City* • **Huanfa Chen** (Department of Civil, Environmental & Geomatic Engineering, University College London) *Developing policing strategies on urban street networks* • **Dr Zhaoya Gong** (School of Geography, Earth and Environmental Sciences, University of Birmingham) *GeoComputational Modelling of Urban-Regional Systems*
17.35	**Keynote** • **Dr Ryan M. Scarrow** (Associate Editor, *Nature Plants & Nature Sustainability*) *City studies and Nature Sustainability*
17.55	**Afterword** • **Dr Ying Jin** (Incoming Director of the Martin Centre, University of Cambridge)
All day	**Poster Session** (Participants with illustrative short presentations will also display their posters) **1. Urban Equality and Right to Cities** • **Haiyun Xu** (Department of Geosciences and Natural Resources Management, University of Copenhagen) *Assessment and mapping of cultural ecosystem service for heritage corridor planning by PPGIS of residents: a case in silk route historical area* **2. Urban Mobility, Regeneration and Housing Studies** • **Dongho Han** (The Bartlett School of Planning, University College London) *Urban regeneration, Policy mobility & Sustainability: The Case of Centum City, Busan, Korea*

- **Ziwen Sun** (School of Architecture and Landscape Architecture, University of Edinburgh)
  The multi-threading processes of Chinese street vending and its spatio-temporary meanings on walkability in Yuncheng

3. Urban Environment and Energy

- **Eurydice Rayanna Chan** (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh)
  Neurodivergent themed neighbourhoods as strategy to enhance the liveability of cities – the blueprint of an autism village, its benefits to neurotypical environments

- **Jing Meng** (University of East Anglia)
  China's carbon emissions embodied in interprovincial trade and their driving forces

- **Meng Meng** (Department of Urbanism, Delft University of Technology)
  Climate change and flood risk: policy framing and the collaborative planning in delta cities

4. Urban Analytics and Smart Cities

- **Xihe Jiao** (Department of Architecture, University of Cambridge)
  Title to be confirmed

- **Lun Liu** (Department of Land Economy, University of Cambridge)
  The capital of food: Detecting the gastronomic culture in Beijing

- **Kelly Chengjiao Wang** (Department of Architecture, University of Cambridge)
  Modelling Beijing metro network in a MEPLAN transport model for simulating Mobility-as-a-Service (MaaS) options

- **Beichen Yu** (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh)
  Colour as an efficient tool for spaces organisation in the city

- **Yongping Zhang** (Centre for Advanced Spatial Analysis, University College London) & **Karel Martens** (Israel Institute of Technology & Radboud University Nijmegen)
  An explorative analysis of group travel behaviour pattern in Shanghai

18.00	**Drinks and Networking**

Abstracts of Papers & Posters

- **Roberta Sakai** (Brazil Institute, King's College London)
  Urban policy diplomacy in 2016: Habitat III and the emergence of the right to the city agenda

By proposing the concept of 'urban policy diplomacy' to examine the way urban agendas are diffused and negotiated, this presentation analyses both the inclusion of the right to the city in the New Urban Agenda (NUA) and the different interpretations defended by local governments, social movements and multilateral organisations during the Habitat III.

It discusses the context for the emergence of right to the city as a global agenda in the last years, replacing the calls for poverty alleviation policies that based the Agenda Habitat in 1996. I argue that the social transformations in Latin America, mainly in Brazil, during the most recent commodity boom, generated a new wave of urban policies and criticism of inequality in cities. Despite the implementation of heavily funded national programmes, the governments have not managed to improve the access to housing and land.

The presentation brings the first results produced by the transnational research project 'Habitat III: Ethnographies', conducted by professors and doctoral students from Unifesp (Brazil) and King's College London.

- **Alexander K. Eduful** (School of Geography and the Environment, University of Oxford)
  Consumption and right to the city: Accra's (Ghana) shopping malls as new spaces of urban consumption

The enabling hands of globalization is far-reaching and can be impetus to citizens' right of access to various spaces in the city in uncanny ways, contrary to popular notion that globalization, *ab initio*, restricts citizens' right to the city. In a democracy, public spaces should permit universal access. Yet, shopping malls, as 'artefacts of globalization', still blurs distinction between public and private spaces. Recently, in most sub-Saharan African cities, including Accra, these spaces have become the new normal drawing people of all socio-economic streams. 'Rumour has it' that when Ghana's biggest shopping mall opened recently, someone pulled his live goat [under leash] to the mall on pretext that a new mall, opened by the President, has come to town and everybody can bring his/her 'wares' to market! It is argued these represent signs of 'incremental' right to the city. Yet, right to the city orthodoxy is framed around 'full right' or 'no right'. It is argued that this stereotypical right to the city orthodoxy is overstated. Relying on recent field survey evidence, this study argues that analysis of right to the city questions should be on different degrees of access or 'incrementalism' rather than the traditional 'full access' versus 'no access'.

- **Yang Song** (Department of Geography, King's College London)
  The disappearing urban villages -- A case study of Chinese migrants' encounters in the process of urbanisation

In contemporary China, over 150 million of migrants from rural areas flock to cities each year, leading to significant demand of urban housing. 'Urban village', a particular type of informal housing, provides an important source of rental housing for the migrant population. Although have been widely criticised for its slum-like living conditions, urban villages remain the most accessible housing for whom cannot be accommodated through China's formal housing system. However, fate

of many urban villages is on the line since redevelopment of urban villages have been taking place in most Chinese cities right now.

The original research presented in this paper was conducted from June to October 2016 as part of my PhD thesis focusing on Chinese internal migrants' identity under institutional reforms. It is a case study of two urban villages in Hangzhou. In this research, 51 migrants were interviewed in two urban villages, along with several interviews with local cadres and villagers. This study finds that redevelopment of urban villages accompanied with gentrification which plays a strategic approach for local government to flexiblise and maximise land value has already threatened most migrant labourers' stablisation in cities, causing tremendous megapolis social polarisation.

- **Hikmah Kamarudin** (School of Geography, Earth and Environmental Sciences, University of Birmingham)
  Physical access for disabled people's inclusion in the city centre

Cities play an important role in offering a variety of opportunities to the public such as the opportunity for participating in employment, education and enjoying social life. For disabled people, physical access to the city is vital in enabling them to fully enjoy the services and facilities provided in urban areas, without discrimination. However, the issue of accessibility of the services, facilities and infrastructure for disabled people inclusion has been long highlighted by researchers as needing more attention. In examining physical access and inclusion, cities are key spaces to be interrogated where research may examine the physical urban form such as the accessibility of streets, buildings and forms of transportation. The purpose of this research is to explore various stakeholders' perspectives on the provision of physical access for disabled people in Kuala Lumpur that affects the inclusion of disabled people in society by undertaking in-depth data collection involving multiple sources of the information i.e. in-depth interview and go-along interview methods. The research findings are expected to contribute to the advancement of knowledge in planning and implementation for an inclusive built environment which provides insights for a better understanding of the facilitation of physical access for disabled people's inclusion in society.

- **Concepcion Rojas** (Department of Architecture and Built Environment, University of Nottingham)
  Detached places: Informal settlements

Informal settlements play an important role in the development of cities, but are rarely treated as part of the urban space. This rejection in both the urban and social realms has created trouble with the way the city and their citizens identify and acknowledge themselves as.
This research aims to uncover correlations between physical and social aspects of place and their impact on the inhabitants' ability to grow attachment to the site. Through grounded theory methodology, semi ethnographic data collection methods and case studies, this theoretical body of work may help to improve the process of informal settlements relocation or improvement. Analysing the spatial-social relations with a proposed opposite place-making theory: the spatial – social implications will be analysed not as space being a reflection of what people are (Cooper Marcus, 1995 in Friedmann, 2007, p. 259), but as people being and acting as a reflection of what space/place gives them. And seeks to contribute to debates by exploring the production of knowledge about the formation of informal settlements, and how that impacts on the place attachment of the inhabitants. Filling up the knowledge gap in urban theory related to socio-spatial impacts on place attachment in informal settlements, which could nurture future planning policies for improvement and relocation.

- **Yasser Khaldi** (Edinburgh School of Architecture and Landscape Architecture, University of Edinburgh)

Urban Regeneration and Resilience: Evaluating the Impact of Regeneration Projects on Social Resilience in Glasgow's Sighthill

The concept of resilience has the capacity to grasp issues holistically across different actors in diverse fields. Urban regenerations projects (URPs) result in shifts in the physical environment and perceptual landscape of its communities, where its interventions are explored carefully to evaluate which interventions stimulate or hinder resilience. For the purpose of understanding URPs impact on social resilience, Sighthill case-study was investigated as part of an ongoing transformational regeneration scheme across Glasgow using place-based approach. Emphasis on social dimensions is given, in addition to the extent of institutions preparedness and involvement to stimulate resilience. The case-study assessment revealed that demolitions and clearance processes have the most detrimental effect on the social fabric; while community engagement leads to empowerment, participation, and increase in social learning. This dissertation demonstrates that resilience isn't only a reactive approach that is confined to response to sudden shocks. However, it's more promising if considered as a proactive long-term approach, which gradually leads to socio-ecological and institutional transformation. Encouraging bottom-up approaches lead to socially innovative activities that are found to be one of the main stimulants of resilience across communities and stakeholders. Lastly, four strategies are derived from the analysis of findings as part of the recommendations including empowering locals; initiating place-based solutions; upgrading efforts for economic growth; and developing civic participation.

- **Naeemah Yusof** (Centre for Urban and Regional Studies, University of Birmingham)
  Rights of older citizens in a walkable city: A case study in Birmingham city centre

Walking is the most popular mode of transport as it is sustainably green, socially equitable, healthy and affordable regardless of a person's demographic and ethnicity background. Hence, in past decades, a walkable city concept in city planning has gained wide acceptance as a sustainable transport and urban form which could offer environmental, psychological, and social benefits for people and the future of a city. Although many scholars have examined the provision of walkable environments in urban planning, there has been a dearth of research concerning walkable city centre environment specifically in consideration of older citizens' right to the city. Therefore, this research has an overall aim to investigate the rights to the city of older citizens. By using Birmingham city centre as a case study with a total of 65 participants in an interview and focus group discussion, this research argues that there is an urgency in city policy to encourage older citizens' social participation through providing an inclusive walkable environment with a long-term goal to achieve healthily ageing life.

- **Haiyun Xu** (Department of Geosciences and Natural Resources Management, University of Copenhagen)
  Assessment and mapping of cultural ecosystem service for heritage corridor planning by PPGIS of residents: a case in silk route historical area

Heritage Corridors provide multiple ecosystem services (ES) for the public, connecting city's segregated open spaces and urban landscape with cultural, natural and recreational values and creating public space for both tourists and local residents.

One important component of ecosystem services is cultural ecosystem services (CES). It is defined as the non-material benefits for public gained from the local environment through spiritual enrichment. CES provides an approach for expressing public cognition, attitude and spiritual benefit. However, it has been rarely considered as in assessment and planning process of heritage corridor, which is demanded. We perform a spatially mapping and evaluation of cultural ecosystem services to elicit opinions of residents and tourists in an ongoing heritage corridor planning area along Silk Road in China through public participatory (PPGIS). The outcome highlights the importance of

public involvement in the evaluation and spatial pattern of cultural ecosystem service and adopting an innovative approach to analyze the potential conflict area for decision-making.

The results reveal patterns of public cognition and attitude in the local multi-functional area. In study area, the hots pots pattern of cultural ecosystem service through correspondence analysis shows that the density of cultural ecosystem service is closely related to local land cover.

Session 2: Urban Mobility, Regeneration and Housing Studies

- **Mengqiu Cao** (Bartlett School of Planning, University College London)
  Examining the social impacts of urban transport equity – towards new approaches

In the transport context, social justice has not previously been treated as a significant issue by most researchers, partly because the relationship between transport and social justice has not been fully conducted. Social justice in itself is a difficult term to define; still less quantifying the contribution that transport investment might make to improving social justice.

From a starting point of interest in social justice issues related to transport and mobility, researchers have investigated the relationship between transport and social exclusion issues, focusing on aspects such as access to opportunities, income, reduced mobility, class, age, ethnicity, gender, social exclusion, travel poverty, and unequal accessibility. The wider social and economic impacts of social exclusion in the transport context have primarily centred on addressing the imbalance in the distributional effects of transport accessibility. This research investigates and explores how an individual's capabilities, functionings and travel equity are affected by transport infrastructure. Three stations on the Beijing subway line 1 and its extension to the Batong line, namely Guomao, Sihui and Tuqiao, have been selected as a case study. Nussbaum's ten central human capabilities approach is adapted as a theoretical framework and applied within the case study. The results of the research analysis show that functionings, capabilities, freedoms and choices differ according to an individual's socio-economic characteristics and geographical context, meaning that transport-related social injustice remains a problem for many people. In order to attempt to improve social justice in transport, we argue that measuring transport-related inequity and social disparities not only consider conventional measurements, such as income and accessibility, but also take both an individual's aspirations (intended capabilities) and actions (actual functionings) into account in order to ensure that people obtain fair access to opportunities and a livelihood.

- **Kezhen Hu** (School of Geography and the Environment, Oxford University)
  EVs in bus lane - a simulation of the controversial incentive

Allowances to access bus lanes for the electric vehicle has been one of the strong yet controversial incentives for EV promotion in some pilot cities like Oslo, Berlin, and Birmingham. As the total number of EV increases, it is expected one day EV will impede bus to an extent that public transport priority is compromised. This paper aims to measure and evaluate the interactive impacts between ICE vehicles, EVs, and buses based on real world road network simulation under different scenarios (various traffic conditions, different EV penetration rates) with a case study of Beijing, which is one of the biggest EV markets in China. The results reveal the complexity of this incentive by focusing on reliability issue other than simple average travel time. This simulation scheme provides a good reference for cities which plan to adopt this kind of Traffic Management Strategies in the future in transition to electro-mobility.

- **Arooj Khan** (School of Geography, Earth and Environmental Sciences, University of Birmingham)

Maps. Regeneration. Civic Identities:
Including children and young people in regenerating Tilbury Town.

The freedom to make and remake our cities and ourselves is one of the most precious yet neglected of our human rights", stated David Harvey. In this talk I will introduce the importance of taking into account children and young people's lives as a fundamental part of community consultations undertaken by local authorities in the UK. Drawing on the discipline of children's geography, I aim to present the argument that space and place directly affect the construction of children and young people's lives, using preliminary and first-wave research from my doctorate case study of Tilbury Town in Essex. I argue that the common place hegemony of adult-centred discourses of children and young people's lives within community consultations should be actively challenged and could be greatly improved by directly engaging with children and young people through creative means. I refer to Lefebvre's concept of the 'right to the city' as a right that is inherently denied to children and young people in particular. One that could be corrected through a widespread acknowledgement of the 'otherness of childhood' in order to acknowledge the divergent experiences of space and place held by children and young people in comparison to their adult counterpart.

- **Jaime Royo Olid** (POLIS - Centre of Development Studies, University of Cambridge)
  Housing financialisation in India: How useful are alternative 'scarcity principles' to explain the dynamics?

Global capital flows seek for High-Quality Collateral in fast appreciating markets such as real-estate in India. Despite India's protective policies on land and foreign investments, the partial liberalisation of its economy since the 2000's has contributed to several waves of financialisation of housing. The paper discusses the incidence of these waves in urban Orissa based on 200 open-ended interviews with households of different socio-economic strata in Bhubaneswar and Cuttack. As stocks of empty houses become apparent, affordable housing for the poorest remains scarce—resembling the pre-crisis paradox in the US and Spain. This paper argues that alternative notions of the 'scarcity principle'—e.g. from Locke, Smith and Keynes (1936), to Harvey (1973, 1982, 2009), Till (2011), Shiller (2013, 2015) and Jagannathan (2016)—can help us better understand how agents behave in financialisation. It builds on Brock's psychological Commodity Theory of Value Change (1968, 1992) that empirically showed how scarcity is used to inflate monetary value and on Aalbers' (2012, 2016) political economy of the financialisation of housing, to sketch a System Dynamics approach between regulation, financialisation, affordability and economic efficiency. This can help explain motivations behind planning restrictions that lead to the 'artificial scarcity' of affordable housing.

- **Delia Murguia Gutierrez** (Edinburgh School of Architecture and Landscape Architecture, University of Edinburgh)
  Challenges to achieving sustainability in social housing in Leon, Mexico

Mexican urban environments have experienced uncontrollable growth. The inexorable growth of social housing development is a primary cause for this. Most of the current provisions in this sector tend to be poor and inefficient. This research focuses on information and data from the city of Leon located in central Mexico. The work deals with the historic challenges that still inform the characteristics of poorly planned urban growth specifically with respect to the rapid expansion of the social housing sector.
The main objective of this paper is to analyse the current situation of social housing in Mexico by focusing on the city of Leon. It is key to identify deep seated issues around the social housing sector because it will help to identify what characteristics of sustainable development are relevant in the Mexican context. Sustainable strategies are necessary to improve the situation because the housing sector produces an important part of the total GHG emissions in the country. Thus, the need to find a solution to implement and apply sustainable strategies is fundamental. This research aims to

establish the principal issues that prevent improvements of the actual social housing situation in Mexico.

- **Phan Duy** (Centre for Urban and Regional Studies, University of Birmingham)
  Resilient Transport System to mitigate flood impacts in coastal cities: a case study of Ho Chi Minh City, Vietnam

During urban development, the role of transportation is becoming more important as cities are spatially expanded over their geographic territory, and highly agglomerated by complex activities. Several flooding incidents have showed that their impacts on transportation can pose disruptions and widespread effects. This blames a necessity of obtaining a resilient transport system but the increasing flood vulnerability related to urban expansion is pushing a success far away from the objective; while the attribution of transport system to urban resilience is insufficiently concerned by governments. By using a combined method of hydraulic modelling and GIS analysis, this research presents an evaluation of flood vulnerability of transport network in Ho Chi Minh City, Vietnam. The results also become the basic for proposing a model of Resilient Transport System. Since this the model, this paper has found a pathway of integrating RTS into existing transportation plans to help city transferring from resistance to resilience strategies.

- **Chien-Ling Lo** (Bartlett School of Planning, University College London)
  Urban regeneration and its role on market sustainability: a case study of Manchester

The role of planning policies in the property market, particularly in regeneration, has been recognised as to shape, regulate and stimulate the market (Adams et al, 2010 & 2015; Jones, 2014). These scholars pointed out the lack of market indicators to evaluate the outcomes of planning and regeneration policies, which shows that the need of regeneration policies to engage with property market still remains neglected and there was little discussion on whether urban regeneration policies encouraged sustainable property markets as important economic institutions. This paper intends to bridge this gap by assessing the impact of regeneration policy on market sustainability with three key concepts of market maturity, resilience and competitiveness in Manchester since the 1970s. The research method includes semi-structured interviews to obtain insights on the interplay of the state-market relations through urban regeneration policy. The findings show that affirmative comments made by the interviewees indicated positive impact of regeneration policies to make the property investment market more sustainable by strengthening its market maturity, the level of resilience and city competitiveness with an emphasis on economic growth and the increase of property value over the past fifty years.

- **Dongho Han** (The Bartlett School of Planning, University College London)
  Urban regeneration, policy mobility & sustainability: The Case of Centum City, Busan, Korea

The aim of my research is to explore how the concept of waterfront regeneration evolves through the policy mobility process and how such idea has impacted on energy performance within local context. The research will examine how these transnational urban policies can be adapted and the challenges that would occur in the transfer process. Also, it will be conceptualised within the context of mobilising urban policies in Northeast Asia and will be in addition to myriad research focused on the Global north and China.

The core of my research project is 'How can Busan, South Korea, borrow the concept of sustainable waterfront development from Yokohama, Japan?'. In particular, the research will focus on a specific waterfront development project, Centum City located in Busan, South Korea and Minato Mirai 21, Yokohama, Japan. Indeed, I will focus on the implications of the circulated idea on the local environmental sustainability in terms of energy performance. This will be addressed through

the lens of policy mobilities, which highlights how learning is socio-spatially structured through unequal relations of knowledge, power and resources, and diverse criteria to measure various types of urban energy performance.

- **Ziwen Sun** (School of Architecture and Landscape Architecture, University of Edinburgh)
  The multi-threading processes of Chinese street vending and its spatio-temporary meanings on walkability in Yuncheng

In light of the multiple benefits of walking (e.g. public health, social indifference, air pollution, and misdirected investment), improving walkability is becoming increasingly significant among architects, urban designers and public health researchers. In contemporary Chinese cities, street vendors are a common feature of many neighbourhoods, frequently occupying specific space where many people regularly walk. As such, the pervasive phenomenon of street vending appears to have a close association with the walkability in urban spaces. However, street vendors, as undesirable populations sometimes, have always been part of informal business practices and are generally self-organised, which directly confronts the hegemonic power of the Chinese government in many ways. Due to street vending being produced by multiple forces (e.g. bottom-up spatio-tactics) of various ordinary lives (e.g. livelihoods of weak populations and demands of nearby residents), a desire for social harmony at a national level impels local governments to seek alternatives that mitigate collective resistance. The spatio-temporary meanings of street vending (i.e. urban conflicts, multiple forces, demands of everyday life, local cultures and habits, as well as individualised, varied, adaptable and flexible tactics) elaborate why street vendors produce and/or trace a specific walkable space as a set of co-existent relations. The aim of this paper, therefore, is to uncover why street vending does emerge and which actors or associations retain the phenomenon. It proposes a 'spatio-population-forcing' triangulation to redefine three characteristics of street vending (i.e. a transient public space, a space created by or for populations, and a particular pattern of governance and ambiguous order). Using the novel triangulation analysis, this paper seeks to unfold additional knowledge to why walkability and how specific walkable spaces are produced in the Chinese context.

- **Dr Zhifu Mi** (Tyndall Centre for Climate Change Research, University of East Anglia)
  Consumption-based emission accounting for Chinese cities

Most of China's CO_2 emissions are related to energy consumption in its cities. Thus, cities are critical for implementing China's carbon emissions mitigation policies. In this study, we employ an input-output model to calculate consumption-based CO_2 emissions for thirteen Chinese cities and find substantial differences between production- and consumption-based accounting in terms of both overall and per capita carbon emissions. Urban consumption not only leads to carbon emissions within a city's own boundaries but also induces emissions in other regions via interregional trade. In megacities such as Shanghai, Beijing and Tianjin, approximately 70% of consumption-based emissions are imported from other regions. Annual per capita consumption-based emissions in the three megacities are 14, 12 and 10 tonnes of CO_2 per person, respectively. Some medium-sized cities, such as Shenyang, Dalian and Ningbo, exhibit per capita emissions that resemble those in Tianjin. From the perspective of final use, capital formation is the largest contributor to consumption-based emissions at 32–65%. All thirteen cities are categorized by their trading patterns: five are production-based cities in which production-based emissions exceed consumption-based emissions, whereas eight are consumption-based cities, with the opposite

emissions pattern. Moreover, production-based cities tend to become consumption-based as they undergo socioeconomic development.

- **Tara Hipwood** (School of Geography and Planning, Cardiff University)
  Tales from the City: Intersections between the urban environment and owner-occupier low carbon retrofit

The significant contribution that refurbishing our aging housing stock can make to reducing CO_2 emissions is widely accepted. With many of our oldest and least efficient dwellings located in cities, these urban environments will be critical in realising the 80% reduction target set out in the Climate Change Act 2008.

Existing research examining domestic retrofit in cities has predominantly taken the form of large-scale quantitative studies comparing the impact of different strategies across multiple cities. In contrast, this paper - drawing on 31 in-depth interviews with owner-occupiers in Bristol who have undertaken significant home improvements - will adopt a qualitative research philosophy. Rather than evaluating strategies specifically designed to encourage low carbon retrofit, this paper identifies background conditions of the city that give rise to home improvements or influence the process through which they are implemented. Such background conditions may include: the local property market; the provision of municipal services; and how inhabitants identify with the city.

To conclude, this paper proposes that a richer understanding of how the city intersects with occupants' lives, from the significant to the mundane, can further the identification of potential home improvement projects and increase the adoption low carbon retrofit measures.

- **Alizara Juangbhanich (Lisa)** (Bartlett School of Planning, University College London)
  How and why do private developers engage in green building practice? The case of Bangkok, Thailand

Sustainable building design and construction has been increasingly adopted as a means to alleviate growing environmental concerns with particular emphasis on green building practice. Barriers in green building practice are often identified as caused by conditions in the contextual environment (i.e. economic, technological, social, and political factors). This research explores the softer organisational and socio-psychological constructs that underlie developer decisions to engage in green building practice in the case of Bangkok, Thailand. A qualitative approach is taken to perform a document analysis on 43 developer organisations registered in Bangkok, followed by interviews with members and top managers from 22 of the 43 organisations.

Findings from the document and interview data show how organisational and managerial constructs can have extensive influences on green building efforts. Green building practice in Bangkok is implemented as a top-down approach with significant influence from top management. Residential, commercial, and industrial sectors are found to respond differently to green building practice. Long-term visions and philanthropic aims of top managers are seen as key constructs that contribute to notions of feasibility and engagement in green building projects.

- **Daniel Tubridy** (Department of Urban Studies and Planning, University of Sheffield)
  New infrastructural aesthetics: case studies of design-led urban stormwater management

Urban climate change adaptation has been reconceptualised in some cases as an opportunity to design more attractive, liveable and aesthetically pleasing cities structured around new resilient and low-carbon infrastructures. This vision of the future foresees new hybrid infrastructural landscapes

that merge ecological and technological systems. It is assumed that by applying sustainable design expertise we can ensure new infrastructures are multifunctional and offer a wide range of social, ecological and economic benefits including enhancing the quality of the urban environment. However, an important question is which, and whose, interpretation of sustainable design and aesthetics is being granted legitimacy and what broader agendas it compliments? Now that experimental and 'design-led' sustainable infrastructures are beginning to be built in some places, there is an opportunity to investigate what assumptions about sustainable design are being made and associated trade-offs between social, ecological and economic objectives. This research aims to investigate the different interpretations of aesthetics which are apparent in new sustainable infrastructure projects and how they variously complement social, ecological and economic objectives and broader urban development goals of growth and sustainability. The paper explores these issues through case studies of experimental and design-led urban stormwater management projects from Copenhagen and Sheffield.

- **Dr Fred Sanders** (Architecture Faculty, Delft University of Technology) - postdoc
  Circular cities by the energy of people

Dutch best practices of sustainability projects in Amsterdam, Rotterdam and other Dutch cities show that making cities sustainable not only depends on the technological and regulation developments. The mobilization of the people involved is the crucial factor. Without the support and initiatives of citizens most technology for sustainability driven implementations become food-loose. The focus of citizens comparing to that of the professionals from municipalities, regional and national government and related organizations like energy producing entities and housing authorities though differs in time-horizon and area-bound scale. Citizens their priorities by taking initiative do lay in the nearby living-area heading for results on short notice what differs from the focus of these professionals. That hampers citizens initiative support and citizen-initiatives results. Still in the Netherlands citizens do create growing numbers of initiatives in the fields of liveability, care-giving and sustainability nature nowadays (www.maex.nl). These are my PhD (Sanders, 2014) and post-PhD research results (2014) that I nowadays may prolong by presenting the results on congresses, seminars and in workshops with citizens, professionals and students. This to stimulate their working together on making cities more sustainable and ready for the coming future.

Circularity the coming next deepening step into the Paris climate agreement does needs the success and enthusiasm of these citizen sustainability initiatives because circularity is strongly behaviour coupled. That's conclusion I dear to make to a statement. Based on personal quest postdoc research on citizen initiative comfort related circumstances though it seems that pure government driven projects can reach sustainable results of quality too. Strategies combining citizen initiative and governmental dominancy though show to have poorer results (Sanders and Timmeren, 2016). Group dynamic factors though play a role in citizen group initiatives, factors like the availability of front running people (Sanders and Overtoom, 2016), meeting places (Sanders, 2016), pride feeling (Sanders and Van Timmeren, 2017a) and support of neighboring citizens (Sanders and Van Timmeren, 2017b).

A conclusion that gives feed to the discussion whether national policies should make a choice for stimulating the multiplying of citizen initiative countrywide or start-up new governmental driven programs. The fact is that Dutch national government lacks the budget for such new governmental programs of impact and therefore chooses for instructing municipalities to stimulate all that could be possible to create sustainable and circular cities (countrywide transition by national law bringing the responsibilities for unemployment, personal health care and spatial planning under the umbrella of municipalities only). The effect are local mixed policies stimulating citizen initiatives and municipality projects both.

This situation bothers me and I am anxious to know what the observations of other country situations are, to talk with experts and university friends and colleagues. Therefore I want to share

my research results, to enrich my insight to learn from them to make the Netherlands more sustainable and circular in the coming future concerning 'citizen sustainability initiatives stimulating factors, to reach the UN Paris Agreements goals with quality in time.

- **Yiting Zhang** (School of Geography, Earth and Environmental Sciences, University of Birmingham)
  Urban morphology and green space: a historico-geographical approach

There is a significant gap, in respect of both research and practice, between urban morphology and urban ecology. Studies of urban ecology have hitherto been largely ahistorical and almost entirely acultural. Until recently, cities have tended to be treated by ecologists as essentially physical entities unconnected to the concerns of historical geographers. In contrast, key concerns of urban morphologists have been how urban physical expressions of culture have changed over time. This is notably the case with research that has adopted a Conzenian or Muratorian approach. Such approaches have stimulated research on the characteristics and planning of the form of cities that has been largely divorced from concerns about ecosystem services. This is somewhat paradoxical in light of the significant areas of most cities that are vegetated and the increasing evidence of the value, especially to health, of these green spaces. Employing a case study in Birmingham, UK, this paper examines the connection between urban morphological research on the fringe-belt concept, as developed by M. R. G. Conzen and others, and the character and distribution within cities of major areas of green space. The principal focus is on how green spaces within those fringe belts that are embedded within cities (for example, parks, recreation grounds, allotment gardens, golf courses, and land attached to educational and medical institutions) have changed over time, especially during the past 100 years.

- **Weiduo Zhou** (School of International Department, University of East Anglia)
  Mapping strategic low-carbon development in Xiong'an New Area: comparative analysis with the development of Shenzhen Special Economic Zone, Shanghai Pudong New Area, and Binhai New Area

Establishing the Xiong'an new area is a "major historic and strategic choice made by the Communist Party of China (CPC) Central Committee and the State Council. The economic development of three counties in Xiong'an New Area lags behind the average level of China. Xiong'an New Area's industrial structure is backward, and is still at the primary stage of industrialization and urbanization. The development of high and new technology industry lags behind, and the traditional industry is facing the high-carbon lock-in trap. The energy structure is high-carbon obviously, and the per capita carbon emission level is lower than the national average. Exploring the Low-carbon development path of Xiong'an New Area is not only the basic requirements of "building a green ecological livable urban district", but also has a more profound significance to the low-carbon transition of new urbanization area at home and abroad. The review of the construction of the new urban area shows that the construction of new urban area is helpful for the formation of diamagnetic center and create new region economic growth pole. As a result, the function of the urban area is better and the industry structure is transformed to green and low-carbon. Consequently, smart, green, low-carbon and ecological are the trend of the construction of new urban. After we compared the construction practice and the experience of low carbon, ecological and wisdom transformation in the Shenzhen Special Economic Zone, Pudong New Area and Binhai New Area, we found that the construction of the three Special Economic Zone and New district has experienced the process of rapid economic growth, industrial structure optimization, the innovation power increasing and low-carbon development level gradually improvement. Shenzhen Special Economic Zone has become the innovation highland of China through reform and opening

up and innovation. Pudong New Area has become an international financial center through policy guidance and industrial agglomeration. Binhai New Area has formed a high end, advanced manufacturing base with high quality and high technology through technological innovation. Reform and innovation, high-end positioning, planning ahead and green development are their experiences. Looking forward to the future, the construction of the Xiong'an New Area should build the green, low-carbon and recycled industry system to break the high carbon locking. We should stick to deep reform and seek the mode for the coordinated regional development. We should stick to innovation-driven development, and supply the new momentum to build a world-class city cluster that is globally competitive in the Beijing-Tianjin-Hebei region. We should be planned scientifically and advanced and progressed in an orderly manner. We should stick low-carbon development and push forward the energy transformation.

- **Ling Min Tan** (Department of Civil and Structural Engineering, University of Sheffield)
  Understanding and formulation of the spatial effect of city economic and energetic characteristics on their resources consumption

Cities have evolved as the centers of businesses and economy development but also contributed to nearly 70% of the global energy consumption and emission. Cities are described as complex open systems where the intake of resources is heavily dependent on flows imported from the region outside the city. The contributions of these imports are maximised when the usefulness of the energy available, namely exergy, is fully utilised (by destroying exergy through energy conversion processes) or exported to other regions in exchange for capital flows into the city. Meanwhile, only a minimal amount of low quality energy such as dissipative heat loss from fuel combustion is rejected out of the system as waste. In this aspect, the term 'effectiveness' was introduced to measure the ability of the system to utilise high exergy (high quality energy) and reject low exergy.

This presentation introduces a method of evaluating effectiveness of urban system by modelling the connections between urban socio-economic sectors as an open system network. The structure of the network is constructed based on the flows associated with Extended Exergy Analysis (EEA), an Engineering-Economics accounting method for exergy use in cities including production factors of domestic labors, capital funds and environmental remediation costs.

- **Eurydice Rayanna Chan (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh)**
  Neurodivergent themed neighbourhoods as strategy to enhance the liveability of cities – the blueprint of an autism village, its benefits to neurotypical environments

In the next decades, it is expected that there will be a significant number of adults with autism who will continue to strive in the neurotypical environment. Therefore, more than anything else parents are most concerned about what will happen to their child when they are no longer alive. Hence, this research presents a framework of an 'Autism Village' through the existing design guidelines with the context of family culture and opportunities for livelihood. This is then followed by a theoretical design of the said neighbourhood to assess the benefits it could possibly bring to the urban area. This optimistic approach of tailoring spaces that allows neurotypicals to see the potential of the population, hopes to enlighten designers in creating urban models where different populations can co-exist. Ultimately, the unique way people with ASD perceive urban spaces are beneficial even to the general and future inhabitants of a city. Therefore, their spatial needs can be employed as a strategy to enhance liveability of urban regions.

- **Jing Meng** (University of East Anglia)
  China's carbon emissions embodied in interprovincial trade and their driving forces

Evaluating the endowments (e.g., emission, energy, water) embodied in trade (EEIT) has been a hot policy and research issue in recent years. Multiregional input-output analysis (MRIO) has been a favored method for quantifying EEIT, linking the producers and consumers. Yet the role of intermediate trade and finial products trade in driving EEIT change is still not clearly understood. Here we present a framework of MRIO-based structural decomposition analysis (SDA) which can identify the drives of the emissions embodied in exported intermediate good for further processing and finished goods for final consumption separately. We conduct a case study which quantifies the drivers of change in CO2 emissions embodied in China's interprovincial trade from 2007 to 2012. The results show that Shanghai outsources less emissions to the Central and North regions because of change in supply chain. Henan has transformed from net exporters to net importers because of rising imports and final demands. We show that framework in this method can significant enrich our understanding on the role of supply chain in the endowments relocation.

- **Meng Meng** (Department of Urbanism, Delft University of Technology)
  Climate change and flood risk: policy framing and the collaborative planning in delta cities

Integration of flood risk in spatial planning is increasingly seen as a way forward to increase the cities' resilience to the growing flood risks, albeit its operationalisation remains very challenging. This study aims to explain the reasons for this difficulty using the delta city of Guangzhou, which is prone to fluvial, pluvial and coastal flooding, to illustrate urban flood risk mitigation struggles to take off locally despite the growing flood risk in a context of changing climate and rapid expansion of the urban fabric. It does so by investigating the recognition of flood risk in spatial planning. By using the method framing analysis, the paper reveals the integration of flood risk concerns in spatial planning in Guangzhou remains an emerging process, gradually shifting from informal activities to formal ones grounded in legislation. This new trend leads to a series of changes in problem setting, action scipts and the governance arrangement in the policy discourse. In spite of these developments, there is still a mismatch between the policy discourse and actual practice in most of the Chinese cities that reflects from the case of Guangzhou. Recognition among the spatial planning practitioners is important but still a long way to achieve this new approach.

Session 4: Urban Analytics and Smart Cities

- **Roxana Karam** (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh)
  Data value in smart city planning

In the age of smart cities, urban planning and urban tectonics are very influenced by the emergence of new technologies. Cities are being explored, seen, heard, walked, lived and experienced differently. New technologies i.e. smart phones have mediated the embodiment of the city dwellers within urban spaces. This paper, aims to flag hidden footprints of citizens in the age of smart cities and how collective personal data analytics can affect city planners and architects in proposing new design strategies in all scales from units to cities and urban infrastructure. This research fits within the realm of contemporary architectural programming strategy and critically reviews the architectural and urban planning parameters and discusses the decentralization of smart city planning through revaluation of design facts and figures. In this study, after an introduction of smart city developments in the last decade, different approaches to big data analytics will be delivered through data infographics and data mapping. The fruit of such study is to designate and generate open-source parametric design toolkits for each design project in each context which not only design practitioners can benefit from, but also it can evolve architectural pedagogy into a new level.

- **Zahratu Shabrina** (Centre for Advanced Spatial Analysis, University College London)
  An overview of Airbnb spatial configuration in Greater London Area

The growth of Airbnb, a Peer to Peer (P2P) Platform for short term rentals, has increased exponentially since its establishment in 2008. This study provides a synthesis of the configuration of Airbnb in Greater London using spatial modelling and quantitative approaches. First, the spatial pattern of Airbnb is examined in Lower Super Output (LSOA) level. The result shows that there are agglomerations of Airbnb in Hackney, Tower Hamlets and Westminster area – where two of these concentrations are located in areas with rapid gentrification. Second, the areas with high possibilities to be the next Airbnb locations are computed based on their attractiveness and easiness to travel. The model shows that Airbnb in London is showing monocentric pattern, which reconfirms that activities in London are highly aggregated in central areas. These types of analysis are beneficial in informing future responses of the type of digital innovation that changes rapidly and influences the city's urban dynamics. Overall this study provides important insight into the understanding of fast growing urban phenomenon such as Airbnb.

- **Dr Xuan Sun** (Nankai University & University of Glasgow)
  Multi-level semantic modeling of 3D urban building space

Digital city is the foundation of Smart city. With the deepening of big spatiotemporal data mining and the increasing demands for intelligent event disposal by machines, the traditional coordinate based data aggregation, representation and analysis become insufficient to support knowledge discovery in many urban applications. The storage and representation of the semantic information of space are of particularly importance to city operation and management in the digitized world. As most of our activities happen indoors or within specific building areas, building space actually plays a significant role in the daily lives of citizens. However, given the complicated land use patterns in cities, the geometric model can hardly satisfy the needs of urban phenomenon understanding and precise management of dynamic activities. With the purpose of effective illustration of the semantic relationships between the inner spaces of buildings and the semantic relationships between different buildings in certain urban areas, we propose to make multi-scale structure analysis of the building space in cities and convert the dataset of 3D geometric models into an integrated multi-level semantic model, where the whole physical space is separated into different meaningful parts and all the parts are organized hierarchically from stories, buildings, building groups to the entire city. As demonstrated in the example application, the semantic model is not only a reasonable framework to organize information, but also an efficient tool for knowledge discovery.

- **Dr Jianzheng Liu** ((Department of Land Economy, University of Cambridge))
  Visualizing the intercity correlation of PM2.5 time series in the Beijing-Tianjin-Hebei region using ground-based air quality monitoring data

The Beijing-Tianjin-Hebei area faces a severe fine particulate matter (PM2.5) problem. Public demands for clear air push the government to take actions but inappropriate and problematic policies were proposed without much scientific evidence and sufficient understanding of the driving factors of PM2.5 pollution. This study attempts to provide such knowledge to enhance our understandings of the PM2.5 pollution problem. We found an interesting and significant time-lagged intercity correlation of PM2.5 time series, and present innovative visualizations of this phenomenon using ground-based air quality monitoring data. The visualizations showed that significant time-lagged correlations exist between the PM2.5 time series of different cities in the Beijing-Tianjin-Hebei area. The visualizations also show that the correlations are more significant in colder months and between cities that are closer, and there are seasonal changes of temporal order of the correlated PM2.5 time series. Further analyses suggest that meteorological conditions might play a primary role in determining the variation of PM2.5 concentrations and might be the

reason for this time-lagged intercity correlation of PM2.5 time series. Policy implications of the insights and potential applications of the visualization techniques presented in this study are also discussed.

- **Dr Li Wan** (Martin Centre for Architectural and Urban Studies, University of Cambridge)
  Urban spatial equilibrium models - a personal perspective

This short presentation discusses the urban applied modelling in general terms and the modelling research that the author has been working on since his doctoral study at Department of Architecture, University of Cambridge. The author's core research work is the development of the Recursive-dynamic Spatial Equilibrium (RSE) modelling framework for assessing large-scale urban development policies. The distinct feature of the RSE model is combining cross-sectional equilibrium model with the recursive, non-equilibrium models for some inertia-prone urban markets. The integrated framework enables the simulation of path dependence in urban development. Two RSE model applications and the associated model validation strategy are introduced briefly. The presentation ends with some personal reflections on applied urban modelling.

- **Chaowei Xiao** (Department of Land Economy, University of Cambridge)
  Using big data sets and spatial dynamic metrics to analyze the population's spatio-temporal patterns of Shanghai

Big Data is changing the traditional way of data collection. As an example of big data, mobile phone signal data can be used in geography and urban planning analysis. According to the signal data sent by a mobile-phone and the location of the base station, the approximate spatial position of the mobile-phone user can be calculated. This research demonstrates that it is possible to use the mobile-phone signal data for calculating the urban population spatial distribution. Then, this research tries to use dynamic metrics including Weighted Mean Center, Standard Deviational Ellipse, Space Time Cube, Emerging Hot Spot to analyze population's time and space variation in Shanghai during a calendar week.

- **Hannah Kaner** (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh)
  Placing the 'home': Orienting interaction within the Smart City

Focus in civic government increasingly emphasises citizen participation and engagement with 'Smart' technologies and strategies: Smart Citizens in Smart Cities. However, some initiatives are failing to effectively introduce elements of the 'Smart' City in a manner that enables citizen inclusion, adoption and interaction. This leaves citizens behind, and risks loss of significant investment. In response, my report focuses on a framework through which to approach the 'Smart Citizen' in the 'Smart City'. By analysing theories and instances of active engagement, I developed a scalable ontology of interaction which is based around 'homing' instincts. This is articulated in three balanced parameters of 'homing': recognition, access and withdrawal. In particular, 'access' and 'withdrawal', play often neglected roles in co-evolving digital strategy with digital citizens. By integrating this ontology into an incentive feedback cycle, and positioning it effectively into user routine, strategists would facilitate ground-up user inclusion in digital innovation and initiatives. It is a simple and effective way for 'Smart' strategists and enterprises to optimise investment, participation and interaction in the Smart City.

- **Huanfa Chen** (Department of Civil, Environmental and Geomatic Engineering, University College London)
  Developing policing strategies on urban street networks

The street structure fundamentally influences the human movement patterns. Recent findings in criminology suggest that the street networks shape the long-term pattern of crimes, as well as the short-term dynamics of crime behaviours. Therefore, street-based models are appropriate for the description and prediction of crime risks, and the use of street networks in crime prevention efforts is well-motivated. A common practice in policing is to divide the territory into several patrol sectors or districts, such that each district is contiguous, compact, and has a relatively equal workload. Traditionally, the districting is based on areal units, including grids and census blocks, which fails to consider the effect of street network. In our research, we propose a street-network police districting problem (SNPDP) that explicitly uses streets as basic units. This model seeks an efficient and balanced design of workloads among multiple districts, and the workload is defined as a combination of multiple attributes. We also develop an efficient tabu search algorithm to generate high-quality districting plans in acceptable time. Besides, we demonstrate that this model is capable of presenting the practitioners' preference on efficiency versus balance, and on specific workload attributes.

- **Dr Zhaoya Gong** (School of Geography, Earth and Environmental Sciences, University of Birmingham)
  GeoComputational Modelling of Urban-Regional Systems

Urban and regional development can be viewed as complex adaptive spatial systems: they reveal tremendous spatial heterogeneity and temporal variability, exhibit varying spatial structures across scales, and manifest emerging macroscopic properties from micro-level behaviours. These systems commonly manifest complexity via basic forms of spatial choice and interaction. Examples include land-use decisions made from a set of development types and involving the interaction of residents and developers across an urban region, destination and route choice in human migration and transportation conceptualized as the interaction manifested through spatial flows, and trading and social networking both contingent on the spatially selected and interacted entities in human and physical systems, among others. GeoComputation, such as computational intelligence and agent-based models, is recognized as best suited for efficient geospatial knowledge discovery due to their inherent intelligence and flexibility. However, they are usually subject to enormous computational intensity. As location-aware and mobile technologies are widely adopted, spatiotemporal data accumulate in volume, velocity, and variety, posing a more challenging issue to handle massive data complexity for computational models of spatial choice and interaction. Given the computational and data intensity involved in these modeling endeavors, CyberGIS should be leveraged to tackle this issue by empowering distributed and high-performance computing for geospatial analysis, modelling and visualization.

- **Lun Liu** (Department of Land Economy, University of Cambridge)
  The capital of food: Detecting the gastronomic culture in Beijing

There is an old Chinese saying that 'People take food as their God', which has been the creed of Chinese people's life through thousands of years. Chinese cuisine now ranks one of the 'Three Grand Cuisines' in the modern world, together with French and Turkish cuisines. Chinese people enjoy labelling themselves as 'Foodies' to express their zest for searching every corner of the city for yummy food. The project is therefore an attempt to create an Ukiyo-e of the food served in the Foodie Capital in contemporary time, by identifying the twenty most popular dishes and their whereabouts in the everyday food carnival. The 'dish accessibility', represented by the shortest distance from each building block to the selected dishes, is also plotted to visualize the relationship between people's living places and the gourmet. In the first place, the project is a record of the dietary aspect of Beijing city life in spatial detail in the 2010s. However, it also tells a lot about the social, economic, and cultural life of the city.

- **Kelly Chengjiao Wang** (Department of Architecture, University of Cambridge)
  Modelling Beijing metro network in a MEPLAN transport model for simulating Mobility-as-a-Service (MaaS) options

The urban transport system is in a rapid transition. Recently new transportation services are changing the way that people commute, especially the new service - MaaS (Mobility-as-a-Service). MaaS is focus on door-to-door journeys through specifying a combination of transport modes. Although people could see potential effects of MaaS, its long-term impacts are largely unknown. To study the impact of these new practices, we simulate MaaS using a land use transport interaction model (MEPLAN) with a recursive dynamic model. We take the Great Beijing Area (Jing-Jin-Ji area) as a case study. In the MEPLAN model, we test different take-up scenarios of MaaS. Base on the results of the simulations, we will make policy suggestions towards future urban developments.

- **Beichen Yu** (Edinburgh School of Architecture & Landscape Architecture, University of Edinburgh)
  Colour as an efficient tool for spaces organisation in the city

As dwellers of a city, we learn to receive massive information from the urban environment and react to it respectively. Most of information in urban is exchanged as we see the different visual stimuli. This paper argues that among all the visual attributes in urban environments, colour can be used as an efficient tool to help designers and planners to communicate with potential users. By organising and applying designed colour schemes and patterns, the intentions of the space from designers can be delivered to users without a concrete syntax in city. The associations, meanings, symbolisms and other characters of colour allow its autonomy in urban environment, as certain groups can read and respond to it within the context.

This paper attempts to illustrate the fact that in current urban conditions, the use of colour in architectural environment should not only be considered within the realms of aesthetic preference and geographical identity, but as an agency to organise the information to assist users to use urban spaces more efficiently. By analysing urban design projects that engaged colour with specific intentions, this paper shows how and why colour should be used consciously by designers to make spaces in city function more smartly.

- **Yongping Zhang** (Centre for Advanced Spatial Analysis, University College London) & **Karel Martens** (Israel Institute of Technology & Radboud University Nijmegen)
  An explorative analysis of group travel behaviour pattern in Shanghai

This paper explores group travel behaviour (GTB), which is defined as two or more persons intentionally traveling together during (part of) a trip. Most travel behaviour studies are based on the assumption of isolated individuals and ignore interpersonal relationships between travellers. Here we propose a smart card data-based method to identify GTB, drawing on insights from the theory of proxemics. This method uses interpersonal time distance to distinguish GTB from persons traveling on their own. We apply the method using smart card data generated by the Shanghai metro system, and find that the value of interpersonal time distance strongly shapes the share of travel that is classified as GTB. However, when the interpersonal time distance is small enough (e.g., smaller than 10 seconds in the case of Shanghai), it is possible to reveal overall GTB patterns at a metropolitan level and at a fine temporal scale with a reasonable level of certainty. Results from our Shanghai study also show that the GTB pattern is distinctly different from the pattern of individual travel in terms of both time and space. While acknowledging the inherent uncertainties related to the approach, we argue that the proposed smart card data based method is a straightforward and workable solution to reveal GTB patterns at a large spatial scale and at a fine temporal resolution and a promising approach that can be applied in more situations.

List of Conference Participants

| Name	Affiliation	Department
Aseel Alturki	University of Warwick	Warwick Institute for the Science of Cities
Mengqiu Cao	University College London	Bartlett School of Planning
Eurydice Rayanna Chan	University of Edinburgh	Edinburgh School of Architecture and Landscape Architecture
Huanfa Chen	University College London	Department of Civil, Environmental & Geomatic Engineering
Yinqiao Chen	University of Cambridge	Department of Land Economy
Bin Chi	University College London	Bartlett Centre for Advanced Spatial Analysis
Fengyuan Chuang	University College London	Bartlett Centre for Advanced Spatial Analysis
Linyan Dai	University of Sheffield	Department of Landscape
Phan Duy	University of Birmingham	Centre for Urban and Regional Studies
Marcial Echenique	University of Cambridge	Department of Architecture
Alexander K. Eduful	University of Oxford	School of Geography and the Environment
Zhaoya Gong	University of Birmingham	School of Geography, Earth and Environmental Sciences
Delia Murguia Gutierrez	University of Edinburgh	Edinburgh School of Architecture and Landscape Architecture
Dongho Han	University College London	The Bartlett School of Planning
Yeonsook Heo	University of Cambridge	Department of Architecture
Tara Hipwood	Cardiff University	School of Geography and Planning
Kezhen Hu	University of Oxford	School of Geography and the Environment
Xihe Jiao	University of Cambridge	Martin Centre for Architectural and Urban Studies
Ying Jin	University of Cambridge	Martin Centre for Architectural and Urban Studies
Alizara Juangbhanich (Lisa)	University College London	Bartlett School of Planning
Hikmah Kamarudin	University of Birmingham	School of Geography, Earth and Environmental Sciences
Hannah Kaner	University of Edinburgh	Edinburgh School of Architecture and Landscape Architecture
Roxana Karam	University of Edinburgh	Edinburgh School of Architecture and Landscape Architecture
Yasser Khaldi	University of Edinburgh	Edinburgh School of Architecture and Landscape Architecture
Arooj Khan	University of Birmingham	School of Geography, Earth and Environmental Sciences
Qiaonan Li	King's College London	Department of Geography
Wenxuan Li	University College London	Bartlett School of Architecture
Jianzheng Liu	University of Cambridge	Department of Land Economy
Zhicheng Liu	University College London	School of Geography, Earth and Environmental Sciences
Lun Liu	University of Cambridge	Department of Land Economy
Chien-Ling Lo	University College London	Bartlett School of Planning
Yusi Luo	University of Cambridge	Department of Architectue
Jing Meng	University of East Anglia	School of Environmental Sciences
Meng Meng	Delft University of Technology	Department of Urbanism, Faculty of Architecture and the Built Environment

- A Martin Centre 50th Anniversary Celebration Event -

Name	Affiliation	Department
Zhifu Mi	University of East Anglia	Tyndall Centre for Climate Change Research
Jaime Royo Olid	University of Cambridge	POLIS - Centre of Development Studies
Vidya Sagar Pancholo	University of Sheffield	Department of Urban Studies and Planning
François Penz	University of Cambridge	Department of Architecture
Deborah Potts	King's College London	Department of Geography
Concepcion Rojas	University of Nottingham	Department of Built Environment
Roberta Sakai	King's College London	Brazil Institute, School of Global Affairs
Fred Sanders	Delft University of Technology	Urbanism department, Architecture faculty
Ryan M. Scarrow	*Nature Plant & Nature Sustainability*	
Zahratu Shabrina	University College London	Bartlett Centre for Advanced Spatial Analysis
Yuli Shan	University of East Anglia	Tyndall Centre for Climate Change Research
Yang Song	King's College London	Department of Geography
Xuan Sun	University of Glasgow	School of Social & Political Sciences
Ziwen Sun	University of Edinburgh	Edinburgh School of Architecture and Landscape Architecture
Ling Min Tan	University of Sheffield	Department of Civil and Structural Engineering
Daniel Tubridy	University of Sheffield	Department of Urban Studies and Planning
Li Wan	University of Cambridge	Martin Centre for Architectural and Urban Studies
Kelly Chengjiao Wang	University of Cambridge	Martin Centre for Architectural and Urban Studies
Li Wang	King's College London	Department of Geography
Tianjiao Wang	University College London	Bartlett Centre for Advanced Spatial Analysis
Ran Xian	University College London	Bartlett Centre for Advanced Spatial Analysis
Chaowei Xiao	University of Cambridge	Department of Land Economy
Haiyun Xu	University of Copenhagen	Department of Geosciences and Natural Resources Management
Shengqi Xu	University College London	Bartlett Centre for Advanced Spatial Analysis
Tianren Yang	University of Cambridge	Martin Centre for Architectural and Urban Studies
Beichen Yu	University of Edinburgh	Edinburgh School of Architecture and Landscape Architecture
Naeemah Yusof	University of Birmingham	Centre for Urban and Regional Studies
Shi Zeng	University College London	Bartlett Centre for Advanced Spatial Analysis
Yiting Zhang	University of Birmingham	School of Geography, Earth and Environmental Sciences
Yongping Zhang	University College London	Bartlett Centre for Advanced Spatial Analysis
Zongyong Zhang	University of East Anglia	School of International Development
Chen Zhong	King's College London	Department of Geography
Weiduo Zhou	University of East Anglia	School of International Department

Notes

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Map of Conference Location
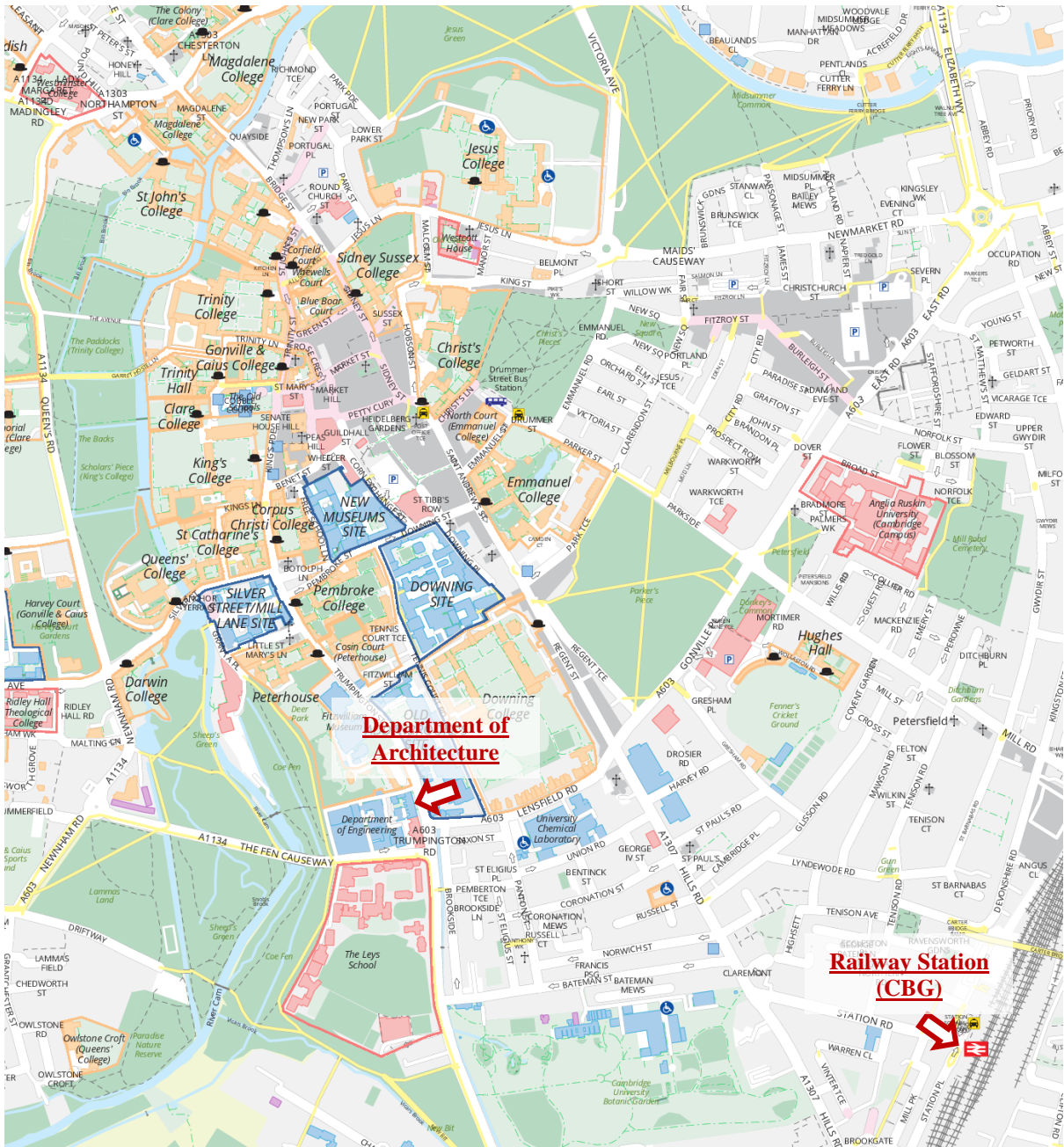
From **Cambridge Railway Station** to **Department of Architecture**

- 1-5 Scroope Terrace CB2 1PX

- Walk: ~15-20min

- Taxi: ~6min on Saturday morning