



THE CASE OF AFFORDABLE HOUSING

A GLOBAL PERSPECTIVE ON FINANCING AND INSTITUTIONAL OWNERSHIP

September 2019 | UCL



Contents

- 3 Welcome
- 4 The Bartlett School of Construction and Project Management
- **5** Our affordable housing research
- 6 Floor plan and Wi-Fi
- **7** Programme
- **13** Keynote speaker
- **14** Workshop speakers
- **15** Round table speakers
- 16 Paper session abstracts

#CaseofAH2019 | #Bartlett100
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Welcome

Welcome to *The Case of Affordable Housing: a global perspective on financing and institutional ownership.* The conference is organised by The Bartlett School of Construction and Project Management, with the support of The Bartlett 100 centenary campaign, celebrating 100 years of The Bartlett Faculty of the Built Environment

We are pleased to welcome a diverse and globally representative group of academics and industry stakeholders. We aim to explore international case studies and industry best practice, focused on new tools and models for financing affordable housing, working towards viable solutions for the UK and beyond.

A fundamental question in the creation and management of affordable housing is who finances it. There has been a shift from public sector led financing towards using capital markets to access funds. Housing associations play a vital role in this landscape as do institutional investors through direct financing or building (Build-to-Rent) and investment in existing large-scale rental accommodation.

The paper session will present the latest international academic research on the financing of social and affordable housing projects worldwide. The round table discussion will bring together industry leaders for a strategic discussion on emerging models of housing funding, supply and place making. The workshops will facilitate concentrated discussion in response to the latest industry trends and research.

We hope you find value in this conference and benefit from collaborating to find solutions to the global affordable housing crisis.



The Bartlett School of Construction and Project Management

The Bartlett School of Construction and Project Management, UCL is a world-class centre of learning and research in the economics and management of projects, in construction and beyond. Our experience in these disciplines reaches back 40 years, to when we established our original degree programme.

We aim to deliver research-informed teaching on leading theories and practice, to perform research which is useful to practitioners and is valued by scholars and to advise on issues and deliver solutions to government and industry which improve performance. Above all, we strive to have successful students, outstanding outputs and grateful clients.

We are part of The Bartlett, UCL's global Faculty of the Built Environment. The Faculty has recently been ranked the top institution in the world for architecture and built environment subjects, in the renowned QS world rankings.

Bartlett 100

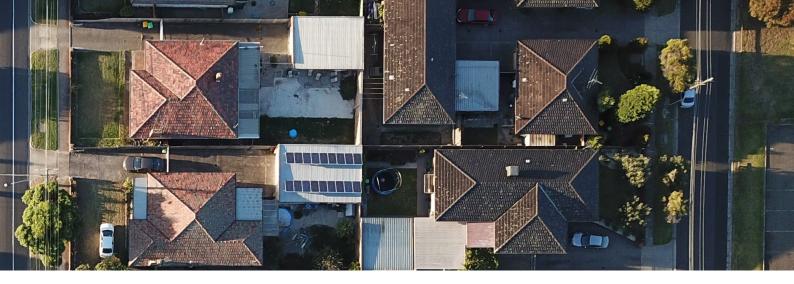
The Case for Affordable Housing Conference takes place as part of Bartlett 100, a year-long celebration of the centenary of the naming of the Bartlett Faculty of the Built Environment.

2019 marks 100 years since Sir Herbert Henry Bartlett, a civil engineer and building contractor, consented to the department being renamed in his honour at UCL after he founded chairs in the School of Architecture and the School of Planning.

Today, The Bartlett is a globally-active faculty that brings together 12 Schools and Institutes that train new professionals for careers in the built environment, studies the global impact of their activity and sets the agenda for the future development of the sector.

Find out more:

www.bartlett100.com



Our affordable housing research

Lack of affordable housing can have a significant impact on productivity and economic growth worldwide, and may lead to increased segregation and inequality within communities.

To date, in the UK, the supply of housing at affordable levels has been approached primarily through the provision of subsidised government schemes such as shared ownership, Help-to-Buy and build-to-rent, in addition to the rising market of the private rented sector.

With restrictive public budgets the provision of affordable housing has meant institutional investors and housing associations taking a more active role in the financing of residential developments.

Our research on affordable housing brings together academics and a wide range of industry stakeholders. We work closely with private sector investors, the public sector and non-profit organisations to enhance our understanding of affordable and social housing.

Through this collaboration between academic research and industry expertise, we aim to explore new models of affordable housing provision and financing, produce relevant policy advice and provide solutions to the global challenge of the housing affordability crisis.

Find out more:

ucl.ac.uk/construction/affordable-housing



The School's research into affordable housing and investment is led by Dr Stanimira Milcheva.

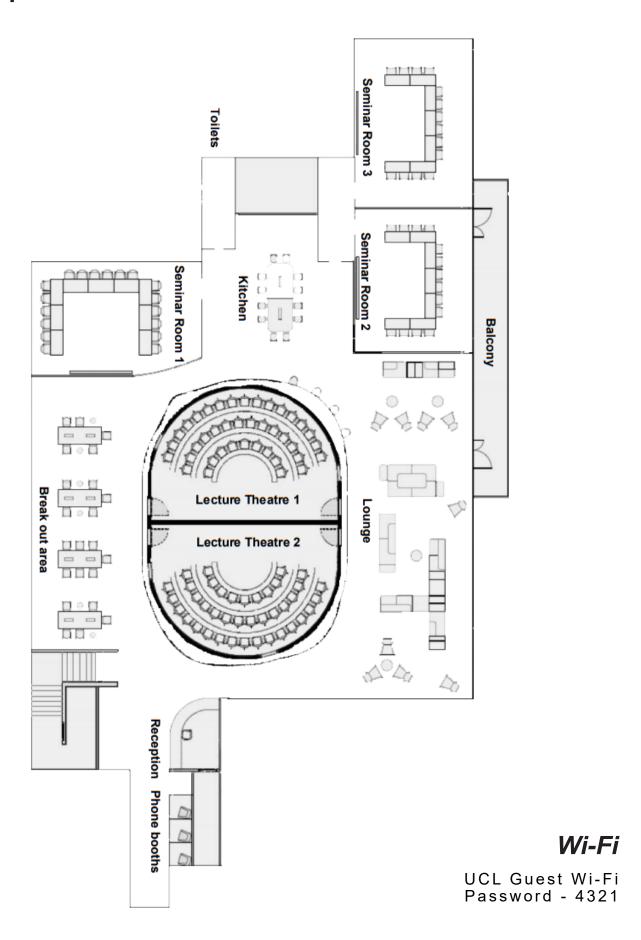
Stanimira's research interests lie in the intersection of housing and finance.

Her research is empirical and she uses both micro and macro level data to address questions related to the way housing markets function.

She has investigated the links between markets as well as individual properties using spatial econometrics. In addition, Stanimira has explored the role of institutional investors and lenders for housing affordability including the rental market.

Contact Dr Milcheva: s.milcheva@ucl.ac.uk

Floor plan



Programme

09:30 -10:00: Registration and refreshments (Reception)

10:00 - 10:15: Welcome (Auditorium)

Prof D'Maris Coffman, Head of The Bartlett School of Construction and Project Management Prof Christoph Lindner, Dean of The Bartlett Faculty of the Built Environment

10:20 - 11:30: Submitted Paper session I - see page 16 for full abstracts.

Parallel sessions - please choose one to attend.

1.1 What can the state do to improve affordability? (Seminar Room 1)

Political Control of the State Legislature and Municipal Bond Financing for Affordable Housing

Prof Yildiray Yildirim (Baruch College, City University of New York)

The impact of housing taxation on the size of newbuilds

Dr Andreas Mense (University of Erlangen-Nuremberg)

Chair: Dr Thies Lindenthal

1.2 Does the mortgage market have a role in improving affordability? (Seminar Room 3)

Low Income Homeownership and the Role of State Subsidies: A Comparative Analysis of Mortgage Outcomes

Dr Matthew Record (San Jose State University)

Mortgage Availability and Homeownership in the Low Income Housing Market: The Role of Credit Scoring Technologies

Prof Jaime Luque (ESCP Europe)

Chair: Prof Yuming Fu

1.3 Land value capture, viability tests and the impact of regeneration on neighbourhoods (*Lecture Theatre 1*)

The Taxing Problems of Land Value Capture, Planning Obligations and Viability Tests: Some Reasonable Models?

Prof Pat McAllister (University of Reading)

Impacts of residential projects associating with urban redevelopment programme on neighbourhood changes: Insights from local planning data in four west London boroughs

Yue Ying (University of Cambridge)

Chair: Dr Tommaso Gabrieli

1.4 Global perspectives on affordable housing (Lecture Theatre 2)

Unlocking affordable end-user housing finance for people on low incomes in urban Africa and Asia: a Reall perspective

Dr Andrew Jones and Dr Lisa Stead (Reall (Social Enterprise))

Rebairrar: Marechal Carmona Neighborhood Regeneration Program

João Schedel and Dr Filipa Roseta (Cascais Municipality - Câmara Municipal de Cascais)

Chair: Prof Yolande Barnes

11:30 - 11:50 Refreshment break (Break out area)

11:50 - 12:50 - Workshops

Parallel sessions - please choose one to attend.

Rental market investment: Happy Tenants = Happy Landlord? (Lecture Theatre 1) Andrew Allen (Aberdeen Standard Investments)

Private rented residential real estate can deliver return characteristics of interest to a wide range of investors. We suggest that the key to the performance is in the predictability and stability of the cash flows from the rental income, and not necessarily through growth potential ahead of all other factors. Using our own proprietary datasets we can see that the approach to managing residential assets has a significant bearing on the investment outcome; we argue that positive long term performance relies upon keeping our tenants happy and that we should reduce the adversarial approach to landlord vs tenants relationships. Our research clearly suggests that keeping residents happy has a direct influence on their length of stay, which in turn influences operational efficiency and long term performance — which keeps landlords happy. These principles can be applied to the affordable housing end of the market which could generate appealing investment propositions for scale investors.

Institutional investment in affordable housing (Seminar Room 3)

Pete Gladwell (Legal and General and Honorary Professor, the Bartlett School of Construction and Project Management, UCL)

The world is awash with institutional funds looking for a home that generates stable income. Does this institutional investment have a role to play in the delivery of genuinely affordable housing? What models exist, or could be created, that enable it to have a more substantial, positive social impact, beyond just lending to Housing Associations, and how do we ensure those social benefits are delivered?

Obsolescence, depreciation and maintenance: unaffordability in the 21st century (Seminar Room 1)

Prof Yolande Barnes (Bartlett Real Estate Institute)

In cities across the world, citizens are complaining that housing is unaffordable but what they mean differs significantly from place to place. This session looks beyond the relationship between capital values and annual incomes and considers the different ways that unaffordability shows up in different cities and how it impacts on different people and different types of household.

In light of these findings, we will then look at how changes in global finance, energy costs, building design and upkeep can, and will, have major implications for landlords and investors as well as for tenants and owner occupiers in the 21st century.

12:50 - 13:50 - Networking lunch (Break out area)

13:50 - 14:50 - Round table discussion (Auditorium)

Tackling the housing crisis - councils, housing associations and Homes England Exploring emerging models of housing funding, supply and place making.

Chair

Paul Hackett, CEO Optivo, Honorary Professor, The Bartlett School of Construction and Project Management, UCL

Panel

Colm Lacey, Brick by Brick Helen Evans, Network Homes and Chair of the G15 Nick Walkley, Homes England Steve Douglas, Altair and Aquila

14:50 - 15:10 - Refreshment break (Break out area)

15:10 - 16:20 - Submitted Paper session II - see page 16 for full abstracts

Parallel sessions - please choose one to attend.

2.1 Impact of rent regulation and Help to Buy on Investment performance (Seminar Room 1)

Renter Protection and Institutional Investment in Multifamily Rental Housing Dr Meagan McCollum (University of Tulsa)

Housing consumption and investment: evidence from shared equity mortgages Prof João Cocco (London Business School)

Chair: Dr Stanimira Milcheva

2.2 Is affordability improving? What factors help different neighbourhoods perform? (Seminar Room 3)

The Cost of Outdated Neighborhoods in a Growing Metropolitan Area: Evidence from the 2010-2011 Christchurch Earthquakes

Prof Yuming Fu (National University of Singapore)

500 Years of Urban Rents, Housing Quality and Affordability

Dr Thies Lindenthal (University of Cambridge)

Chair: Prof Pat McAllister

2.3 Rethinking supply chains to improve affordable housing delivery (Lecture Theatre 1)

Improving affordable housing delivery through the reduction of rework in the supply chain

Mehdi Shahparvari (London South Bank University)

2.4 Global perspectives on affordable housing (Lecture Theatre 2)

Finding Critical Success Factors for rising Affordable Housing Challenges around the world: Evidences from different countries

Prof Mona N. Shah (Amity University)

Social Housing and REIT Funding for Affordable Housing in Africa Developing Housing Nations

Dr Olusegun Olaopin Olanrele (Moshood Abiola Polytechnic and University of Malaya) and Dr Babatunde Adekoyejo Jolaoso (Moshood Abiola Polytechnic)

Chair: Dr Lisa Stead



16:20 - 16:30 - Comfort break

16:30 - 17:35 - Keynote lecture and closing remarks (Auditorium)

Myths and Realities of Affordable Housing: Some International Lessons

Prof Stephen Malpezzi, University of Wisconsin-Madison

Affordable housing is a subject of increasing concern in dozens of countries and hundreds of cities, as the varied contributions to this conference remind us. Drawing on lessons of research and practice from around the world, including a number of those provided by today's presenters, we will explore some of the myths and some of the realities of affordable housing. These include how to navigate the numerous meanings of the term "affordable;" why a multi-pronged approach is usually necessary; and what that approach might entail. Some myths and some realities of "affordability" will be explored, including why some "best practices" and other policy lessons translate well across countries, while others do not.

Chair: Dr Stanimira Milcheva

17:35 - 19:30 - Canapé and drinks reception (Break out area)



Keynote speaker



PROFESSOR STEPHEN MALPEZZI

University of Wisconsin-Madison

Stephen Malpezzi is Emeritus Professor in the James A. Graaskamp Center for Real Estate at the University of Wisconsin-Madison; a Research Affiliate at Rutgers' Center for Real Estate; and Dean of the School of Advanced Real Estate Studies at the Homer Hoyt Institute. A former president of the American Real Estate and Urban Economics Association, Malpezzi's research includes work on economic development, the measurement and determinants of real estate prices, and

the effects of regulation and other economic policies on real estate markets. Among numerous publications, he's the author of *A Primer on U.S. Housing Markets and Housing Policy* (with Richard Green; Urban Institute Press, 2003; the second edition is forthcoming) and is currently writing a book on local economic development. Prior to his current affiliations, Malpezzi was an economist specializing in urban development at the World Bank, and at the Urban Institute. Malpezzi is an active blogger, at http://reudviewpoint.blogspot.com.

Workshop speakers



ANDREW ALLEN Aberdeen Standard Investments

Andrew Allen is Global Head of Investment Research, Real Estate and a member of the Global real estate investment management committee. Andrew manages analysts in the US, Singapore, Norway, Germany and the UK. Andrew joined Aberdeen in 2011 from Oriel Securities where he was a partner in the real estate securities team. Previously, Andrew's roles include founding partner and head of research & strategy at Cordea Savills, senior manager (property forecasting) at Henderson Global Investors and senior analyst at Property Market Analysis. Andrew has an MSc in Property Investment and a BSc in Economics and Business Finance.



PETE GLADWELL Legal & General

Pete Gladwell joined Legal & General in August 2007, with responsibility for the design and development of new funds. He led on the creation of a new generation of funds particularly focused on liability matching and Defined Contributions pensions, which now total over £5 billion. In 2013, Pete was appointed Head of Public Sector Partnerships, to lead L&G's direct investments across property and infrastructure into partnerships with Local and Combined Authorities, Registered Providers, Universities, the NHS, and central government, including the Cabinet Office. These investments total over £4.35bn. He was formally a Senior Analyst in DTZ Research and enjoyed an erstwhile life as a youth worker for seven years in the Oxfordshire area.

Pete is an Honorary Professor at UCL, Fellow of the Royal Society of the Arts and Member of Brasenose College, Oxford University; holding a post-graduate MA, as well as an initial degree in Computation. He also holds the Investment Management Certificate. Pete is a Trustee for the Young Foundation, which works to create a more equal and just society through social innovation, and is heavily involved in local community initiatives in Harlesden, London.



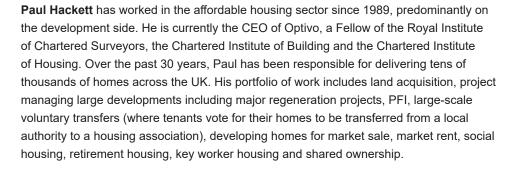
PROF YOLANDE BARNES Bartlett Real Estate Institute

Yolande Barnes has studied and commented on UK real estate markets for over 30 years and on world cities and global real estate trends for the last 11 years. Yolande's particular specialities in the past have been residential markets, regeneration, land, urbanism and mixed use neighbourhoods. Her new remit as Professor of Real Estate at the Bartlett Real Estate Institute at UCL is to explore and understand how real estate contributes to all types of value: social, environmental and economic. She does this looking at all sectors and across the globe, drawing on the best research and findings that the whole of UCL has to offer, writing readable and understandable, practically orientated useful articles and publications for the industry and offering executive and short courses as well as bespoke research services. Most of Yolande's writings can be found on the Savills Research website (www.savills.co.uk/research/world) where she was Director of World Research until very recently.

Round table speakers



PAUL HACKETT CEO, Optivo





COLM LACEY
CEO, Brick by Brick

Colm Lacey is founding Managing Director and Chief Executive of Brick by Brick, a progressive development company established by Croydon Council which specialises in the development of beautifully designed multi-tenure housing on smaller sites. Colm has led some of London's largest and most complex development projects for over 15 years, including senior level roles at the Homes and Communities Agency, Greater London Authority and London growth boroughs such as Newham, Croydon and Lambeth. He holds masters degrees in Economics and Urban Design and is a regular expert contributor to industry publications.



HELEN EVANSCEO, Network Homes

Helen Evans is the CEO of Network Homes and the Chair of the G15 which is a group of London's largest housing associations. She is also Chair of the Joseph Rowntree Housing Trust and a Trustee of the Joseph Rowntree Foundation. Helen has worked in the social housing sector in London for over 30 years. Prior to joining Network Homes, Helen was the CEO of Brent Housing Partnership, an arms-length management company that was responsible for Brent Council's housing stock.



NICK WALKLEY
CEO, Homes England

Nick Walkley is Chief Executive of Homes England, having become Chief Executive of its predecessor body in March 2017. He leads the work to create the new organisation, focused on disrupting the land and residential funding market to increase and accelerate the supply of new homes. Recent highlights include the launch of the first PRS Real Estate Investment Trust and Homes England winning Residential Financier of the Year at the RESI Awards. Nick has had a senior career in Local Government, including Chief Executive roles at two London Boroughs as well as a range of sector roles at national level. He was rated 4th most influential in the LGC 100 and is an Inside Housing IH50 influencer.



STEVE DOUGLASGroup CEO of Altair and Aquila

Steve Douglas is Group Chief Executive of the housing and regeneration consultancy Altair and its parent company Aquila Services Group plc. He brings a wealth of experience gained from years of working in affordable housing. He has held a number of senior regeneration and development positions, as well as being Chief Executive at two housing associations and the Housing Corporation, where he led on the creation of the £8.4 billion, 3 year National Affordable Homes Programme, and the introduction of private sector organisations delivering affordable homes. Steve was recently awarded a CBE for his dedicated service to housing.

Paper session abstracts

Political Control of the State Legislature and Municipal Bond Financing for Affordable Housing Eunkyu Lee, **Prof Yildiray Yildirim** (Baruch College, City University of New York)

This study investigates whether the tax-exempt municipal bonds have any effect on housing affordability at the state level. Specifically, we use the political control of the state legislature as an instrument and find that Democratic or divided-controlled state legislature issues a larger volume of per-capita housing bonds, compared to the Republican-controlled legislature. We also find that, controlling for other affordable housing programs, a 10 percent increase in per-capita Multifamily Housing Bonds leads to a 0.7-0.8 percent decrease in the number of renter households facing housing cost burdens. However, Mortgage Revenue Bonds increase the number of owner-occupied households facing the cost burdens in the home-owner sector, contrary to the rental market analysis. The results imply that there is a shift of households from the rental market to the owner-occupied market with the financial support of low-interest mortgages, but those new homeowners still face housing cost burdens. Additionally we show that the positive externality is maximized in lower income neighborhoods where median household incomes are below the 20th percentile threshold.

The impact of housing taxation on the size of newbuilds **Dr Andreas Mense** (University of Erlangen-Nuremberg), Dr Nikodem Szumilo (UCL)

We study the impact of a tax on the price of housing on the size of newbuilds. Because housing units are durable, cannot be altered easily, and can be traded on a secondary market, demand at the time of construction affects the housing market over many years. We develop an assignment model with heterogeneous agents that relates taxation of housing consumption to the distribution of housing unit sizes in newbuilds. We then exploit a recent change in the tax schedule of transaction taxes in the UK to investigate empirically the impact of lower taxes on the size of newbuilds. As predicted by theory, newly constructed housing units become larger as taxes are lowered.

Low Income Homeownership and the Role of State Subsidies: A Comparative Analysis of Mortgage Outcomes

Prof Stephanie Moulton (The Ohio State University), **Dr Matthew Record** (San Jose State University), **Dr Erik Hembre** (University of Illinois)

Between the late 1970s through 2013, state Housing Finance Agencies (HFAs) have financed nearly \$300 billion in mortgages to first time homebuyers. Descriptive evidence indicates that these state subsidized programs help financially vulnerable households enter homeownership and retain their homes at higher rates than lower income households purchasing homes in the private market. However, no prior studies have empirically estimated this relationship or the underlying mechanisms. We construct a matched sample of about 500,000 and estimate the competing hazard of default (or foreclosure) and prepayment. We find that HFA borrowers across our sample period are about 20 to 30 percent less likely to default or foreclose on their mortgages than otherwise similar non-HFA borrowers, with the greatest effects observed during the 2005-2007 mortgage boom. Reduced risk of default is likely due to a combination of more affordable loan terms, value-added service delivery practices, as well as selection into state programs.

Mortgage Availability and Homeownership in the Low Income Housing Market: The Role of Credit Scoring Technologies

Prof Jaime Luque (ESCP Europe), Prof Timothy Riddiough (University of Wisconsin-Madison)

We study the role of credit scoring technologies (CSTs) in affecting the flow of capital into the low-income housing market. Local traditional banks (TBs) and remote "originate-to distribute" non-bank lenders (NBs) compete for creditworthy non-prime borrowers. Because NBs apply CSTs based on hard credit information only, whereas TBs utilize soft as well as hard information, screening becomes increasingly lax as the NB lending sector gains market share vis-á-vis perceived improvements in CSTs. A new characterization of housing boom and bust is provided, occurring when creditworthy non-prime consumers migrate *en masse* into and out of the NB lending market.

The Taxing Problems of Land Value Capture, Planning Obligations and Viability Tests: Some Reasonable Models?

Prof Pat McAllister (University of Reading)

Given their increasing importance in the formation and implementation of UK planning policies, this paper focuses on the use of development viability tests to determine how land value uplifts could be distributed between key stakeholders. Alternative approaches to operationalising the contested concept of Benchmark Land Value (BLV) are evaluated. The effects of different approaches to BLV on potential land value capture are simulated for a number of hypothetical development sites to compare implied betterment tax rates and viable affordable housing proportions. It is concluded that geographical variations in local property prices produce variations in the potential for land value capture. Given that viability models are susceptible to significant levels of error and potential bias, using such models to make and implement planning policies renders such processes vulnerable to opportunistic behaviour and prone to miscalculation.

Impacts of residential projects associating with urban redevelopment programme on neighbourhood changes: Insights from local planning data in four west London boroughs

Yue Ying (University of Cambridge)

Nowadays an urban regeneration plan has launched in the London Old Oak Common (OOK) area to transform the derelict plot into a well-connected transit hub and a new neighbourhood. This study aims to assess whether the redevelopment project can deliver significant changes in neighbourhoods in terms of its associated housing (especially affordable housing) supply, and how these physical changes transform neighbourhoods' deprived profile in various socio-economic dimensions. Through detailed analysis of planning application data in the last decade in OOK neighbourhood areas (four boroughs in West London: Brent, Ealing, Hammersmith and Fulham, Kensington and Chelsea), the study finds that large amount of major and medium residential projects with mixed tenure are very likely to shift the deprived socioeconomic profile in OOK neighbourhoods by reshaping its social composition.

Unlocking affordable end-user housing finance for people on low incomes in urban Africa and Asia: a Reall perspective

Dr Andrew Jones, Dr Lisa Stead (Reall (Social Enterprise))

Rapid urbanisation and poverty have compelled millions of people to live in informal settlements across the global South. While delivering decent housing for all is essential to global sustainable development, one formidable blockage to delivering at scale is a lack of affordable and accessible housing finance for end-users. People on low incomes have been viewed by lenders as high-risk and excluded from financial systems. This paper engages with this challenge, offering practical examples and potential ways forward for the financing of affordable housing. It does so through case studies of models from Reall, a UK-based international development organisation that targets people on low incomes in urban Africa and Asia. These models include government subsidy initiatives (India), government-supported community initiatives (Philippines, Kenya), community-funded models (Nepal), and commercial bank mortgage transactions (Nepal, Pakistan). These all highlight the need for more favourable political, regulatory and financial environments which recognise the specific challenges of developing low-income housing.

Housing consumption and investment: evidence from shared equity mortgages

Dr Matteo Benetton (University of California, Berkley), Philippe Bracke (Financial Conduct Authority), **Prof João Cocco** (London Business School) and Nicola Garbarino (Bank of England)

Academics have proposed products with equity features for the financing of housing which, in spite of their risk-sharing benefits, have not become mainstream. This paper studies an exception, a UK government scheme which has provided 10 billion pounds of equity financing. The analysis of the origination and prepayment behaviour of households who have used the scheme highlights housing affordability constraints. A difference-in-difference analysis of an increase in the maximum equity limit shows that households took advantage of the change to increase housing consumption, and not to reduce leverage and house price risk exposure. We draw implications for how households approach housing decisions, taking advantage of the fact that shared equity mortgages allow the separation of housing consumption and investment.

Rebairrar: Marechal Carmona Neighborhood Regeneration Program João Schedel, Dr Filipa Roseta (Cascais Municipality - Câmara Municipal de Cascais)

In Cascais, the absence of central government policies has meant the local authority has had to take a number of measures designed to address the challenges of social housing at municipal level. The Marechal Carmona neighborhood is a municipal area that will be redeveloped by 2021, according with the Cascais social housing plan. This will be a pivotal project that has been developed entirely by council technicians across several of Cascais Municipal Council's operating units, with the objective of rehousing all its residents again in the neighborhood and integrating new social groups, young people, families, increasing from 222 to 540 dwellings and creating a unique intergenerational community. This project will act as a model for intervention and activity on the ground, economically sustainable and will seek to develop best practices, both at the level of urban layout and public space solutions, and also at the building level, with a strong support in issues of sustainability, both environmental, social and economic.

Renter Protection and Institutional Investment in Multifamily Rental Housing **Dr Meagan McCollum** (University of Tulsa), Dr Stanimira Milcheva (UCL)

Investors may be hesitant to purchase multifamilty rental buildings in jurisdictions where legal protections of tenants is high. For example, landlords in protectionist states may experience restrictions such as the inability to collect large security deposits from tenants or face longer waiting periods before they may evict tenants for non-payment. We examine how state-level differences in renter protection laws impact building-level annual net operating income (NOI) for investment-grade multifamily rental properties in the US. After controlling for variation in property and local demographic characteristics, we find that in high risk (high poverty, high rent to income ratio, etc.) census tracks higher renter protections are consistently and significantly associated with higher annual NOI but in low risk areas, the impact of better renter protection on annual NOI is negative or insignificant. These results show, in some cases, that the "happy tenants, happy landlords" paradigm is indeed possible.

The Cost of Outdated Neighborhoods in a Growing Metropolitan Area: Evidence from the 2010 - 2011 Christchurch Earthquakes

Prof Yuming Fu (National University of Singapore), Dr Song Shi (University of Technology, Sydney)

Outdated buildings in existing neighborhoods of externality in Christchurch, New Zealand can create negative externalities to hinder desensification at a time of growing population and deteriorating housing affordability. We do so by taking advantage of the 2010-2011 earthquakes in the city, which reduced the barrier to neighborhood redevelopment across a diversity of neighborhoods. We find that, in desirable locations only, neighborhoods with outdated buildings suffered a loss in land value before the earthquakes and regained it upon the reduction in the redevelopment barrier. The findings show that land use externalities can prevent outdated neighborhoods in desirable locations from desired densification, hindering urban growth.

500 Years of Urban Rents, Housing Quality and Affordability
Prof Piet Eichholtz, Dr Matthijs Korevaar (Maastricht University) **Dr Thies Lindenthal** (University of Cambridge)

We study urban housing rents and quality from 1500 to 2017 for Amsterdam, Antwerp, Bruges, Brussels, Ghent, London, and Paris. Based on a dataset of 436,000 rent observations, we relate rent developments to wages and consumer prices. Real rents have developed similarly in the long term, but reflect shorter-run differences in local economic and political conditions. Long-run growth in real rents has been limited. The ratio of wages to market rents was stationary before 1900, but grew considerably after that. Most of the increase in housing expenditure that did occur is attributable to increasing housing quality rather than rising rent.

Improving affordable housing delivery through the reduction of rework in the supply chain **Mehdi Shahparvari**, Prof Herbert Robinson, Dr Daniel Fong and Dr Obas J Ebohon (London South Bank University)

Housing has been experiencing inadequate supply which is exacerbated by strong growth in demand. Several factors have contributed to the shortage of affordable housing including lack of investment from public and private sectors, land and regulatory regime and economic fluctuations. As a result of rework, the cost of production also dented the supply of affordable housing. The aim of this study is to explore the causes of rework as an alternative approach to reduce the cost of production in affordable housing. A qualitative research approach based on semi-structured interviews with experts in housing construction industry is adopted to investigate the root causes and barriers to eliminating rework within the entire housing supply chain. Preliminary findings suggest that reduction of rework through improved managerial practices, effective communication and collaboration among contributors in housing supply chain with a support of automation can significantly reduce the cost of housing production.

Finding Critical Success Factors for rising Affordable Housing Challenge around the world: Evidence from different countries

Prof Mona N. Shah, Dr Tribhuvan Pratap Singh, Dr Arun K. Ahuka (Amity University)

The paper attempts to identify the characteristics most critical in the successful delivery of affordable housing projects. In the first part an extensive review of global literature is studied across the whole ecosystem and lifecycle of affordable housing projects. Nine important factors were extracted for further study. To confirm and validate the factors in the Indian context, an expert opinion survey of practitioners in India was conducted using the Relative Importance Index. Furthermore, to understand whether the factors weigh equally in a global context two cases (London and Pune cities) were studied using data from the public domain. A variation in the local contexts of London and Pune is observed in the factors that weigh better in the delivery of successful affordable housing. In conclusion, it is found that developed countries are better at government support and policies, land planning, and impetus to developers in AH delivery.

Social Housing and REIT Funding for Affordable Housing in Africa Developing Housing Nations **Dr Olusegun Olaopin Olanrele** (Moshood Abiola Polytechnic and University of Malaya), Tomisi

Olusegun. Adegunle (Moshood Abiola Polytechnic), **Dr Babatunde Adekoyejo Jolaoso** (Moshood Abiola Polytechnic) and Dr Rosli Bin Said (University of Malaya)

The projection of 2billion urban slum dwellers by the year 2030 is a greater challenge in the face of inadequate and unaffordable housing. In the developed and some developing economies, houses are available but at extreme high prices while in developing Africa nations, there is lack of adequate housing and the few available ones are for the ruling and elite class making the problem of housing affordability insurmountable for many Africa nations. Therefore, there is need for a holistic review of all contributing factors to housing provision. This paper attempts to reincarnate the social housing system/ policy in the current capitalist economies with institutional participation in housing finance for adequate supply. The study adopted mixed qualitative methods of content analysis and focus group discussion with 13 experts. The result revealed failure of Public Private Partnership (PPP) strategy and suggest social housing policy implementation and Residential REIT establishment.



